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BIRDS OF THE VICINITY
OF THE UNIVERSITY
OF INDIANA

BY
W. L. MCATEE

September, 1905

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FROM THE PROCEEDINGS OF THE INDIANA
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ECOLOGICAL NOTES ON THE BIRDS OCCURRING WITHIN A RADIUS OF FIVE MILES OF THE INDIANA UNIVERSITY CAMPUS.*

BY WALDO LEE MCATEE.

With Photographic Illustrations by CLARENCE GUY LITTELL.

At various times since 1883 students of Indiana University interested in birds have kept records of the migrations, breeding habits, etc., of the birds within a radius of several miles of Bloomington. Twenty sets of migration records, covering fourteen seasons, are on file in the archives of the Biological Survey at Washington, D. C.

Three lists of birds have been prepared by former students.

W. S. Blatchley in 1886 recorded the "Winter Birds of the Vicinity of Bloomington, Indiana," in the *Hoosier Naturalist* I, pp. 169-171.

B. W. Evermann published a list of "Birds of Monroe County, Indiana," in the *Hoosier Naturalist* II, pp. 137-145 and 164. He enumerates 179 species.

C. H. Bollman listed 192 species in an unpublished paper on file in the Biological Survey.

"The *Hoosier Naturalist*," in which Evermann's and Blatchley's lists were published has long been extinct and the two papers are not accessible.

Some of the above lists and part of the migration records were used by Amos W. Butler in his "Birds of Indiana" published in the 22d Annual Report of the Department of Geology and Natural Resources, Indianapolis, 1897.

Pertinent facts contained in the above sources have been brought together in the present paper. They have been confirmed or supplemented by the author's observations extending through the last four years. While the material presented is chiefly of local interest it contains additions to our knowledge of the birds of Indiana and the more general subject of bird migration. Wherever possible, the authority for any state-

*Contributions from the Zoölogical Laboratory of Indiana University, under the direction of C. H. Eigenmann. No. 60.

ment is indicated. When no authority is given the author is responsible for the data.

The following is a list of observers most quoted. Their initials are used to indicate their authority.

V. H. Barnett.
 W. S. Blatchley.
 C. H. Bollman.
 C. H. Eigenmann.
 B. W. Evermann.
 W. L. Hahn.
 P. J. Hartman.
 C. H. Kennedy.
 E. M. Kindle.
 C. G. Littell.
 W. L. McAtee.
 N. B. Myers.
 A. B. Ulrey.
 G. G. Williamson.

When other authorities are quoted their names are given in full.

To make the facts contained in this paper more readily accessible to teachers and students they have been placed in tabular form and appear at the end of the paper. The table and the index were prepared by C. H. Frazee and Leonard Haseman.

The region over which observations have been made, embracing the territory within about five miles of Bloomington, is varied in its topography. On the east and north are many rocky ravines, some of them containing cascades. At Bloomington, to the south of it and some distance to the west the surface is gently rolling and has typical features of the oölitic limestone area of Indiana. To the west in the Mitchell limestone area the surface is pitted with various sinkholes beneath which are caves of considerable extent. Bloomington and the area about it are well drained by rock bound brooks running in part to the north through Rocky Branch, Griffy Creek and Bean Blossom, finally flowing into the North Fork of White River. Other brooks, the Jordan River and Clear Creek drain the southern part of Bloomington through Clear Creek into the East Fork of White River. The extreme eastern part of the area is drained into Salt Creek and thence into the East Fork of White River. The western part

is rich in springs and sinkholes filled with water, the general trend of the underground drainage of this area being southward. There are no large streams or other large bodies of water or swamp in the region under consideration. Two artificial ponds have been constructed in recent years, a smaller one which supplies the Monon R. R. yards with water and a larger one which is the storage reservoir of the Bloomington waterworks.

The region is fairly forested, largely by second growth timber, though in some parts of the Knobstone region the primeval forests remain.

The area is not well suited to aquatic birds but offers many favorable localities to terrestrial migrants and residents.

The total number of species recorded is two hundred and twenty-five, and includes seventy per cent. of the birds recorded from the entire State. Of this number ninety-eight nest here and thirty-nine of the breeding birds are also permanent residents. Twenty-one are winter visitants. Ninety-six are migrants and are seen during a few days in spring and fall. Six are extinct, two are included on rather doubtful evidence, and one is a hypothetic species. The last three groups are included in the supplemental list. One hundred species have been observed on or over the University Campus.

Each species which has been observed on or over the campus of Indiana University is marked by an asterisk. In cases of species which are either winter or summer residents, the recorded extremes of their stay are given. In the case of transients the limits of their arrival and departure are given for both of the migratory seasons. Extinct and hypothetic species are referred to a supplemental list. The numbers in brackets and the nomenclature are those of the A. O. U. check-list.

I am under obligations to Prof. W. W. Cooke and Mr. A. W. Butler for permission to examine migration schedules.

1. [3] *Colymbus auritus* Linn. Horned Grebe.

Common migrant. April 11 to 24. This species is classed as a common migrant wholly upon evidence obtained in the spring of 1903. It had not heretofore been recorded from the county, but circumstances lead me to believe that it has merely been overlooked. The first specimen was obtained April 11, by Mr. J. J. Batchelor and Mr. James Simonton. Three others were seen that day. The following numbers were seen at the dates given:—7, April 12; 4, April 13; 2, April 17; 2, April 18; 2, April 19, and 2, April 24.

2 [6] *Podilymbus podiceps* (Linn.). Pied-billed Grebe.

Common migrant. March 5 to April 29 and October 7 to November 30. May be found in nearly any sink or quarry-hole during the migratory season.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.
Observer	C. H. B.	C. H. B.	G. G. W.	G. G. W.
First seen	4-3	.....	4-10	3-26
Next seen	4-4	.....	4 16	.....
Common .....	.....	.....	.....	.....
Last seen .....	.....	10-7	.....	.....
Abundance	Common.	Not common	.....	Not common

Year	1899.	1899.	1902.	1903.
Observer	N. B. M.	.....	W. L. H.	W. L. M.
First seen	4-19	.....	.....	3-8
Next seen .....	.....	.....	.....	4-19
Common .....	.....	.....	.....	4 27
Last seen .....	.....	11-30	4-29	4-29
Abundance	Rare.	.....	.....	Common.

3. [7] *Gavia imber* (Gunn.). Loon.

Common migrant. April 1 to May 11. Loons may be seen on the larger ponds any morning after a stormy night in April. Before the waterworks and railroad reservoirs were made these birds were not seen. Bollman and Evermann do not give the Loon in their lists of 1886 and 1887.

MIGRATION RECORD.

Year	1886.	1903.
Observer	B. W. E.	W. L. M.
First seen	4-1	4-13
Next seen .....	.....	4-15
Common .....	.....	4-15
Last seen .....	.....	5-11
Abundance .....	.....	Common.

4. [60] *Larus philadelphia* (Ord). Bonaparte's Gull.

Rare migrant. One record April 16, 1903. A flock of one hundred "gulls" of three sizes was reported in April, 1902, by J. J. Batchelor. From his descriptions I concluded that these were either Forster's or the common Tern, and Bonaparte's and the Herring Gull. When these birds appear so far from any large body of water it is always after a period of very high winds.

5. [69] *Sterna forsteri* Nutt. Forster's Tern.

Rare migrant. Four seen May 13, 1903.

6. [70] *Sterna hirundo* Linn. Common Tern.

Not common migrant (C. H. B. '86).

7. [120] *Phalacrocorax dilophus* (Swain). Double-crested Cormorant.

Rare transient (C. H. B. '86). May 3, 1885 (C. H. B.).

8. [129] *Merganser americanus* (Cass.). American Merganser.

Common migrant. In 1887 B. W. Evermann classed it as not common. In late years, however, the Fish Duck has become a common spring visitor to the reservoirs.

MIGRATION RECORD.

Year.....	1903.
Observer.....	W. L. M.
First seen.....	4-16
Next seen.....	4-19
Common.....	5-14
Last Seen.....	5-14
Abundance.....	Common.

9. [131] *Lophodytes cucullatus* (Linn.). Hooded Merganser.

Common transient (C. H. B. '86). March 4, 1885 (C. H. B.). Several specimens, without dates, are in the University collection.

10. [132] *Anas boschas* Linn. Mallard.*

Abundant migrant. February 10 to April 23. After the example of Prof. W. W. Cooke all records simply given as "ducks" are referred to this species.

MIGRATION RECORD.

Year	1886.	1892.	1903.
Observer.....	B. W. E.	E. M. K.	W. L. M.
First seen	3-1	.....	2-10
Next seen.....	3-4	.....	3-8
Common .....	.....	4-3	4-23
Last seen.....	.....	.....	4-23
Abundance .....	.....	.....	Common.

11. [139] *Nettion carolinensis* (Gmel.). Green-winged Teal.

Not common migrant (B. W. E. '87). March 4 to April 17.

MIGRATION RECORD.

Year.....	1883.	1903.
Observer.....	B. W. E.	W. L. M.
First seen	3-4	4-10
Next seen.....	3-5	.....
Common.....	.....	.....
Last seen.....	.....	4-17
Abundance	Not common	Not common

12. [142] *Spatula clypeata* (Linn.). Shoveller.

Common migrant. March 20 to May 8. The first migrants are males and are seen in small numbers; later in the season the flocks are mixed, but the females are then generally in the majority.

MIGRATION RECORD.

Year	1886.	1896.	1902.	1903.
Observer.....	B. W. E.	W. S. B.	W. L. M.	W. L. M.
First seen.....	.....	.....	.....	3-20
Next seen .....	.....	.....	.....	4-5
Common .....	.....	.....	.....	4-19
Last seen	5-8	5-8	4-13	4-21
Abundance	Not common	.....	.....	Common.

13. 143 *Dafila acuta* (Linn.). Pintail.

Rare migrant. Feb. 26 to March 4.

MIGRATION RECORD.

Year.....	1886.	1902.
Observer.....	B W. E.	W. L. M.
First seen	2-26	3-1
Next seen	3-4	.....

14. [144] *Aix sponsa* (Linn.). Wood Duck.*

Rare migrant. March 24 to May. Formerly a common summer resident (C. H. B. '86), and the most common duck, often seen near the campus (B. W. E. '87). Reported breeding in 1887 (G. G. W.), and in recent years (A. W. Butler, '97). At present this duck is extremely rare; the only one reported since 1897 was seen in May, 1902 (T. J. Headlee).

MIGRATION RECORD.

Year.....	1885.	1887.
Observer.....	C. H. B.	G. G. W.
First seen	3-31	3 34
Next seen	4-1	3-26

15. [146] *Aythya americana* (Eyt.). Redhead.

Although this bird is a common migrant in neighboring localities, there is but one record of its occurrence here. Four were taken March 20, 1903.

16. [147] *Aythya vallisneria* (Wils.). Canvas-back.

Common migrant (C. H. B. '86). Common April 23, 1903.

17. [148] *Aythya marila* (Linn.). American Scaup Duck.

One record. March 4, 1886 (B. W. E.).

18. [149] *Aythya affinis* (Eyt.). Lesser Scaup Duck.*

Common migrant. March 9 to May 8. The Little Blue-bill is the most common duck. As is the case with the Shoveller, the first migrants are males. The females, however, are present in larger numbers than the males in the flocks seen later in the season.

MIGRATION RECORD.

Year.....	1885.	1886.	1902.	1903.
Observer	C. H. B.	B. W. F.	W. L. M.	W. L. M.
First seen	3-30	.....	3-27	3-9
Next seen .....	.....	.....	4-5	1-5
Common .....	.....	.....	.....	4-21
Last seen .....	.....	5-8	4-19	4-26
Abundance .....	.....	.....	Common.	Common.

19. [151] *Clangula clangula americana* (Bonap.). American Golden-eye.

Rather common migrant. There are several records, but the only date at hand is March 1, 1902.

20. [153] *Charitonetta albeola* (Linn.). Buffle-head.

Very rare migrant (B. W. E. '87). March 5, 1886 (B. W. E.).

21. [166] *Oidemia perspicillata* (Linn.). Surf Scoter.

Rare: one seen in 1886, "a storm duck" (C. H. B.). Of very unusual occurrence away from large bodies of water in this latitude. The only other records for the State are for the year 1875.

22. [167] *Erismatura jamaicensis* (Gmel.). Ruddy Duck.

Not common migrant. April 24, 1903.

23. [169.1] *Chen caerulescens* (Linn.). Blue Goose.

Rare migrant (C. H. B. '86).

24. [172] *Branta canadensis* (Linn.). Canada Goose.*

Common migrant. February 17 to April 12. October 31 to November 24. On two occasions, 3-2, '02 and 2-17, '03, Wild Geese were seen flying south. On both of these dates there was a sudden drop in the temperature, in the latter case to six degrees below zero. Those seen 4-12, 1903, were flying through a driving rain. A Canada Goose remained about the campus of the University for about a week ending 3-27, '02. At nights it flew in all directions over the campus from pond to pond, and its loud calling provoked a still more vociferous demonstration from the watchdogs below.

MIGRATION RECORD.

Year.....	1885.	1885.	1900.	1902.	1902.	1903.
Observer.....	C. H. B.	C. H. B.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	3-11	.....	3-3	3-2	.....	2-17
Next seen.....	.....	.....	3-8	.....	.....	3-2
Common.....	.....	.....	.....	3-2	.....	.....
Last seen.....	.....	11-24	.....	.....	10-31	4-12
Abundance.....	Common.	Not common	.....	Common.	Common.	Common.

25. [190] *Botaurus lentiginosus* (Montag.). American Bittern.*

Rather rare migrant. April 5 to May 13, August 7 to October 22. Most often seen on the weedy margins of a pond but not rarely in the open glades of a forest, or in the pine groves where they flap heavily from treetop to treetop, making a tremendous clatter in rising and alighting.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1888.	1892
Observer.....	C. H. B.	C. H. B.	B. W. E.	.....	A. B. U.
First seen.....	.....	8-27	.....	4-27 ††	4-23
Next seen.....	.....	9- st	.....	.....	5-†
Common.....	.....	.....	.....	.....	.....
Last seen.....	5-13	10-22	5-5	.....	.....
Abundance.....	Rare.	Rare.	Not common	.....	.....

* Foster Hight. † E. M. K. †† Wylie and Mitchell.

Year.....	1900.	1901.	1902.	1903.
Observer.....	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	4-17	4-25	.....	4-5
Next seen.....	.....	4-29	.....	4-21
Common.....	.....	.....	.....	.....
Last seen.....	.....	.....	5-4	4-22
Abundance.....	.....	.....	.....	Rath'r rare

26. [191] *Ardetta exilis* (Gmel.). Least Bittern.

Rare migrant. One was taken alive and kept in the laboratory for a week in May, 1902. It was fed small fishes, which it swallowed readily. Its appetite was amazing but was the cause of its death. A large mass of fish bones became stuck in its oesophagus and put an end to his gastronomic feats and to his career.

27. [194] *Ardea herodias* Linn. Great Blue Heron

Rather rare migrant. March 12 to April 30. August 25.

MIGRATION RECORD.

Year.....	1885.	1886.	1901.	1902.	1903.
Observer.....	C. H. B.	W. S. B.	W. L. M.	Bicknell.	W. L. M.
First seen.....	3-25	4-8	4-22	.....	3-12
Next seen.....	3-26	.....	.....	.....	.....
Common.....	.....	.....	.....	.....	.....
Last seen.....	.....	.....	.....	8-25	4-30
Abundance	Not common	.....	.....	.....	Rath'r rare

28. [196] *Herodias egretta* (Gmel.). American Egret.

Rare migrant, not observed since 1887. "The earliest record for Indiana is that given by Prof. Evermann from Bloomington, April 10, 1887" (A. W. Butler). Evermann also says a few were seen in August, 1886. C. H. Bollman called it a rare transient in 1886, but makes the remark that it might be added to the list of summer residents as he had taken it July 29, 1885. It has also been taken in this county by I. N. Corr and S. E. Meek.

29. [201] *Butorides virescens* Linn. Green Heron.* Figs. 1-5.

Common summer resident. April 10 to September 22. In 1901 C. E. Edmonson found a colony of ten or twelve nests in a small clump of cedars near the water-works reservoir. June 3, 1901, a nest was found in a small cedar, about 50 yards from a pond. It was 25 feet high in a dense thicket of small trees. The nest was poorly made of sticks and the eggs were visible from below. There were 5 eggs. On June 11 these were hatched, and on the 19th the young were well covered with down and were hopping around among the branches (W. L. H.). May 11, 1903, a Green Heron's nest with 6 eggs was found 13 feet up in an apple tree in an orchard. Five eggs were in the lower layer, the sixth on top. There was another nest about 20 feet up in an adjoining

tree, which contained four eggs. The eggs in the first nest were hatched May 29 (C. G. L.).

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1892.	1893.
Observer.....	C. H. B.	C. H. B.	C. H. B.	E. M. K.	E. M. K.
First seen	4-17	.....	4-24	4-22	4-17
Next seen	4-18	.....	4-29	.....	.....
Common	4-28	.....	.....	.....	.....
Last seen .....	.....	9-22	.....	.....	.....
Abundance	Abundant.	.....	Abundant.	Rare.	Rare.

Year.....	1899.	1900.	1902.	1903.
Observer	N. B. M.	N. B. M.	C. H. K.	W. L. M.
First seen	5-16	4-17	4-23	4-10
Next seen .....	.....	5-2	.....	4-14
Common .....	.....	5-12	.....	5-11
Last seen .....	.....	.....	.....	.....
Abundance	Common.	Common.	.....	Common.

30. [204] *Grus americana* (Linn.). Whooping Crane.

"Mr. Charles Dury, of Cincinnati, O., informs me that there is a specimen in the Cuvier Club in that city that was taken near Bloomington, Ind." (A. W. Butler.)

31. [214] *Porzana carolina* (Linn.). Sora.

Rare migrant. B. W. Evermann says it is not often seen and gives two dates—May 5, 1886, and April 15, 1887. C. H. Bollman, '86, records it as a transient. It was also seen May 8, 1900. (N. B. M.)

32 [215] *Porzana noveboracensis* (Gmel.). Yellow Rail.

Not common. (B. W. E. '87.) "Prof. Evermann met with it near Bloomington in August, 1885, where one specimen was taken alive in a marsh" (A. W. Butler).

33. [219] *Gallinula galeata* (Licht.). Florida Gallinule.

Rare migrant. Two specimens taken May 10, 1880, by H. S. Bates.

34. [221] *Fulica americana* Gmel. American Coot.

Rare migrant. April 12 and 26, 1903 (W. L. M.), and April 17, 1900 (N. B. M.).

35. [228] *Philohela minor* (Gmel.). American Woodcock.

Reckoned as a common summer resident in 1886, this bird can now be ranked only as a rare migrant.

MIGRATION RECORD.

Year.....	1885.	1902.	1903.
Observer	C. H. B.	W. L. M.	W. L. M.
First seen	3-29	3-4	4-19
Next seen			
Common			
Last seen			
Abundance	Common.	Rare.	Rare.

36. [230] *Gallinago delicata* (Ord.). Wilson's Snipe.*

Common migrant. March 6 to May 10. September 22 to October 28. Common along all small streams in March and April.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.
Observer	C. H. B.	C. H. B.	B. W. E.	G. G. W.
First seen	4-17		3-15	3-25
Next seen	4-18		3-18	4-2
Common				
Last seen	4-22	9-22	3-25*	4-18*
Abundance	Abundant.	Not common	Common. *W. S. B.	Common. *B. W. E.

Year.....	1899.	1902.	1902.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	P. J. H.
First seen	4-28			3-6
Next seen				
Common		4-18		4-17*
Last seen	5-10		10-28	
Abundance	Common.	Common.	Common.	*W. L. M.

37. [239] *Actodromas maculata* (Vieill.). Pectoral Sandpiper.

Moderately common migrant. March 15 to May 9. This bird seems to have been quite common during the spring of 1885. The bulk of the species departed May 3.

MIGRATION RECORD.

Year.....	1885.	1886.	1887.	1903.
Observer	C. H. B.	B. W. E.	B. W. E.	W. L. M.
First seen	3-27	3-15	3-15	.....
Next seen	4-19	.....	3-18	.....
Common	4-22	.....	.....	.....
Last seen.....	5-9	5-5	.....	4-29
Abundance	Common.	.....	.....	Not common

38. [242] *Actodromas minutilla* (Vieill.). Least Sandpiper.

Rare migrant (B. W. E. '87).

39. [246] *Ereunetes pusillus* (Linn.). Semipalmated Sandpiper.

Rare migrant (B. W. E. '87). Twelve were seen April 26, 1903 (H. H. Lane), and one May 3, 1903.

40. [254] *Totanus melanoleucus* (Gmel.). Greater Yellow-legs.

Not observed until the spring of 1903 when it was seen in small numbers on April 26, 29 and 30 and May 1 (W. L. M.). A bird conspicuous by restless actions accompanied by continual and piercing cries.

41. [255] *Totanus flavipes* (Gmel.). Yellow-legs.

One record. Concerning the year 1895, which was remarkable for early arrivals of the Yellow-legs, Butler says: "The last report from southern Indiana that spring was from Bloomington, where it was noted April 26" (Juday).

42. [256] *Helodromas solitarius* (Wils.). Solitary Sandpiper.

Common migrant and perhaps rare summer resident. April 23 to June 9. October 6. This bird has been reported as early as March 20, but these dates should probably be referred to some other species, perhaps Wilson's Snipe. One observer records it as a summer resident while another gives a queried affirmation. The date, June 9, is an extremely late one if the Solitary Sandpiper is to be considered purely as a migrant. But it probably indicates summer residence, since in the Alaskan breeding grounds young have been found in the same month

(June 23, '03, Charlie Creek, Yukon River. W. H. Osgood). A common bird during the migratory season in all muddy places. Seen as early as September 20 in fall. Will probably be found in August.

MIGRATION RECORD.

Year.....	1886.	1887.	1892.	1899.	1900.	1903.	1903.
Observer	C. H. B.	G. G. W.	E. M. K.	N. B. M.	N. B. M.	W. L. M.	W. L. M.
First seen	5-3	4-28	5-7	4-29	5-3	4-23	.....
Next seen	5-5	4-30	.....	.....	5-4	4-30	.....
Common .....	.....	.....	.....	.....	5-12	5-3	.....
Last seen	5-7	.....	.....	5-16	5-12	6-9	10-6
Abundance.....	Rare.	.....	Rare.	.....	.....	Common	.....

43. [261] *Bartramia longicauda* (Bechst.). Bartramian Sandpiper.

Not common transient (C. H. B. '86.).

44. [233] *Actitis macularia* (Linn.). Spotted Sandpiper.

Common migrant and rare summer resident. April 12. There is one egg in the University collection from this locality. Found in the same places as the Solitary Sandpiper but in smaller numbers.

MIGRATION RECORD.

Year	1885.	1892.	1900.	1901.	1903.
Observer.....	C. H. B.	E. M. K.	N. B. M.	W. L. M.	W. L. M.
First seen	4-22	4-27	4-17	4-12	4-19
Next seen	5-2	5-7	4-28	.....	4-24
Common	5-3	.....	.....	.....	4-28
Last seen .....	.....	.....	.....	.....	.....
Abundance.....	Common.	Rare.	.....	.....	Common.

45. [273] *Oryzochus vocifera* (Linn.). Killdeer.* Fig. 6.

Abundant summer resident and rare winter resident. January 31 to Dec. 12. Nest and four eggs found April 12, 1903 (C. E. Edmondson). Another set found May 12, 1903, in a depression in the ground lined with dry grass (C. G. L.). During several dark and cloudy or rainy

nights (March 5 to 13, 1903), the well-known piercing notes of this bird were heard everywhere at all hours. On Nov. 29, '03, a Killdeer was seen on the snow when there was no open water. The few uncovered muddy spots were filled with tracks and probings.

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1886.
Observer.....	C. H. E.	C. H. E.	C. H. B.	B. W. E.	B. W. E.
First seen.....	3-18	2-28	.....	3-7	.....
Next seen .....	.....	3-7	.....	3-14	.....
Common.....	.....	3-19	.....	3-25*	.....
Last seen .....	.....	.....	12-12	.....	11
Abundance .....	.....	Abundant.	Abundant.	Common.	Common.
				*W. S. B.	

Year	1892.	1899.	1900.	1901.	1902.
Observer.....	A. B. U.	N. B. M.	N. B. M.	W. L. M.	W. L. M.
First seen.....	3-24	3-2	3-9	3-17	3-2
Next seen.....	4-2	5-3	4-20	3-19*	3-7
Common.....	.....	.....	.....	3-24	3-26
Last seen .....	.....	.....	.....	.....	.....
Abundance	Common.	Rare.	Not common	Abundant.	Abundant.
				*V. H. B.	

46. [289] *Colinus virginianus* (Linn.). Bob-white.*

Bob-white is scarcely a common resident at present. In 1886 C. H. Bollmann considered it abundant. May 18, 1903, a nest and two eggs were found in a rather damp spot in a large dense woods and June 14, young ones were seen running about with their mother (C. G. L.). Coveys have been observed rather late; eight were seen April 13, 1902, and seven, May 16, 1903. The so-called "crazy" season was at its height October 11, 1902. A score of instances was noted of their flying in open doors and against windows. More often seen in the woods than in open fields.

47. [300] *Bonasa umbellus* (Linn.). Ruffed Grouse.

As late as 1886 the Ruffed Grouse was a common resident in Monroe County (C. H. B.), and in 1887 was frequently seen in the hills northeast of town (B. W. E.), and was rather common in deep woods (W. S. B.). These phrases are far from indicative of the occurrence of the Ruffed Grouse at present. In four years of continuous field-work but one bird has been observed each year. April 7, 1901, a splendid male was seen; March 23, 1902, one was found dead; Sept. 23, 1902, one flew through a window into a house, and March 14, 1903, one was seen in a dense, tangled and wild tract of woods which was swept by a hurricane several years ago (P. J. H.). It is in this place that the Ruffed Grouse will probably persist longest in this county, and it may be found there in sparing numbers for several years. Three were seen in this locality on April 9, 1904, and two more on April 16. In Brown, the adjoining county east, the Ruffed Grouse was classed as common as late as 1894 (E. M. K.).

48. [316] *Zenaidura macroura* (Linn.). Mourning Dove.* Figs. 7-10.

Common resident, less numerous in winter, though it is sometimes seen in bands of four to twelve in this season. They become common after the first week of March, and the dates are rather regular—March 8, '01, March 9, '02, March 8, '03. A bird of even distribution, equally liable to be met with in thickets or more open woods or in plowed lands or weedy fields. A most attractive creature of beautiful appearance and pleasing manner, in the mating season filling the air with the sonorous melody of his love.

The point of greatest interest in regard to the Mourning Dove is its early nesting. Mr. A. W. Butler says: "They begin cooing about the middle of March. * * * They mate early, and their nests, with complement of eggs are often found early in April—April 4, Franklin County." B. W. Evermann found a nest and set of eggs here April 17, 1886. In the last few years, however, nests and eggs have been found at much earlier dates. In 1901, the first nest was found March 17; no eggs were seen, however, until April 7 and April 10. Those found on the latter date were hatched April 14, therefore they must have been laid about on the first and second days of April. The nest was in a tangle of vines on a rail fence. In 1902 the record was as follows: Cooing March 7—nest complete March 27—one egg seen March 28. This

egg and nest were then destroyed by an unfortunate accident. Three other nests were found, however, on the 29th, each of which contained either one or two eggs. All of these nests were placed in small cedar trees. A Dove was heard cooing imperfectly November 9. Doves began cooing in 1903 on March 5. The first nest was found in a cedar, March 22; on April 8 it contained one egg and one young dove just hatched. Reckoning the period of incubation as two weeks, this nest must have had a full set of eggs on March 25 or 26. Another nest was in a pine tree and had young two and one-half inches long on April 11. These were at least a week old, probably more. Then this nest must have contained a full complement of eggs on March 21. On April 24 a nest containing two eggs was found flat on the ground under a mandrake.

49. [325] *Cathartes aura* (Linn.). Turkey Vulture.*

With one exception all the records show that the Buzzard is a resident only a little over nine months in the year, January 31 to November 21. In 1892 E. M. Kindle said that a few were permanent residents. They are quite abundant in this county, and it is not an uncommon thing to see them in companies of ten to sixty gliding about in circling paths in the upper air.

B. W. Evermann found a full set of eggs April 17, 1886. This is earlier than any other date reported from the State. C. G. Littell found young just hatched in a nest in a hollow log in a large, dense and damp woods, May 19, '03. According to the owner of the place Buzzards had roosted at this spot for three years before.

MIGRATION RECORD.

Year.	1885.	1885.	1886.	1892.	1893.	1899.
Observer	C. H. B.	C. H. B.	W. S. B.	E. M. K.	E. M. K.	N. B. M.
First seen.....	2-7	.....	2-22	2-6	2-22	2-26
Next seen.....	2-8	.....	2-23 ^a	2-13	2-25	4-1
Common.....	3-3	.....	.....	2-13 ^a	3-2	4-2
Last seen .....	.....	11-13	.....	.....	.....	.....
Abundance.....	Very common.	Abundant.	Common.	Common.	Common.	Common.
			^a B. W. E.	A. B. U.		

Year.	1900.	1901.	1902.	1902.	1903.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.	.....
First seen.....	4-5	2-17	2-26	.....	1-31	.....
Next seen.....	4-18	3-3	3-14	.....	2-10	.....
Common	4-18	3-17	3-20	.....	3-8	.....
Last seen .....	.....	.....	.....	11-8	.....	11-21
Abundance.....	Common.	Abundant.	Abundant	Abundant.	Abundant.	Abundant.

50. [326] *Catharista uruba* (Vieill.). Black Vulture.

Rare spring and summer visitant. "It was noted in Monroe County, 1890" (A. W. Butler). One was seen May 16, 1903.

51. [327] *Elanoides forficatus* (Linn.). Swallow-tailed Kite.

Rare summer visitant. All that have been reported from this county were seen in August, 1885. One was taken on the 4th (C. H. B.), and two were seen of which one was taken on the eighteenth (B. W. E.).

52. [331] *Circus hudsonius* (Linn.). Marsh Hawk.

Rare migrant. The earliest and latest dates of arrival for a series of years are February 28, '85 (C. H. B.), and April 19, '02. It is seen nearly every year, and it was probably common March 14, 1903, when several were seen in a densely wooded creek bottom (P. J. H.).

53. [332] *Accipiter velox* (Wils.). Sharp-shinned Hawk.*

An uncommon resident; common in winter and during the migrations, especially in March and October. W. S. Blatchley reports it as breeding.

54. [333] *Accipiter cooperii* (Bonap.). Cooper's Hawk.*

Resident; not common; breeds. Most numerous in January, February and March.

55. [334] *Accipiter atricapillus* (Wils.). American Goshawk.

Rare winter visitor; one taken November 22, 1885 (G. G. W.).

56. [337] *Buteo borealis* (Gmel.). Red tailed Hawk.*

Common resident; breeds. Nest and eggs April 19, 1903.

57. [339] *Buteo lineatus* (Gmel.). Red-shouldered Hawk.*

Common resident; breeds. This and the last species are somewhat confined to the wilder parts of the country, but are occasionally seen flying over the city.

58. [343] *Buteo platypterus* (Vieill.). Broad-winged Hawk.*

Rather rare resident. Not reported from this county before 1892. More often seen in recent years. Commonest in April and October.

59. [347a] *Archibuteo lagopus sancti-johannis* (Gmel.). American Rough-legged Hawk.

Rare winter visitor; February 21, 1885 (C. H. B.).

60. [349] *Aquila chrysaetos* (Linn.). Golden Eagle.

Rare winter visitor; a few seen every winter. Has been observed as late as May 15, 1903 (W. L. M.) in Brown County, where it is as likely to remain to breed as in any part of Indiana. Last date for Monroe County, November 28, 1903.

61. [352] *Haliaeetus leucocephalus* Linn.). Bald Eagle.

Rare winter visitor. Considered less rare than the last by W. S. Blatchley and B. W. Evermann. But in recent years the Bald Eagle has not been observed at all, while Golden Eagles have been seen and captured every year. The last date is July 29, 1885 (S. E. Meek). This date suggests a possibility of summer residence of this bird also.

62. [357] *Falco columbarius* Linn. Pigeon Hawk.

Rare migrant, taken several times during 1885-1887, but not observed in recent years. March 12, 1887 (W. S. B.). April 28, 1885 (C. H. B.). November 7, 1885 (G. G. W.).

63. [360] *Falco sparverius* Linn. American Sparrow Hawk.*

Common resident, less numerous in winter; in fact, they are entirely absent some winters as they were during those of 1900-1901, 1902-1903 and 1884-1885. They become common in March—March 15, 1902, March 19, 1903, March 26, 1885 (C. H. B.). They have been observed mating March 17, '03 (W. L. M.), and repairing a nest on the University campus, which has been used for years, on April 11, 1901 and 1903. In years when they do not winter it is seen that the females are the first migrants, as for example, in 1885. The first and second dates for females were March 17 and 20, while males were not seen until March 23 and 24.

64. [364] *Pandion haliaetus carolinensis* (Gmel.). American Osprey.

Rather rare migrant. March 12 to April 29. November. C. H. Bollmann saw but one in four years, March 12, 1885. B. W. Evermann said it was occasional on the White River ('87), and E. M. Kindle reported it during November, 1892. Of late it has been seen frequently

in the central part of the county; the record for 1903 is as follows: First seen April 13, next April 17, and last April 29.

65. [366] *Asio wilsonianus* (Less.). American Long-eared Owl.

Rare winter visitor. Fall 1886 (B. W. E.); Jan. 30, 1883 (W. S. B.); March 19, 1885 (C. H. B.), are the only dates at hand.

66. [367] *Asio accipitrinus*. (Pall.). Short-eared Owl.

"Very rare; two seen in the fall of 1886" (B. W. E.).

67. [368] *Syrnium varium* (Barton). Barred Owl.*

Considered a common resident by C. H. Bollmann, B. W. Evermann and W. S. Blatchley. The last is authority for a breeding record. I know but little concerning the occurrence of owls in Monroe County. In fact owls are more rare here at present than in any place where I have ever made observations. The only record of a Barred Owl in three years is March 24, 1902, when one was heard. That this condition is only a temporary one is shown by the fact that in the fall of 1900 Screech Owls were abundant and Great Horned and Barred Owls were often heard and seen.

68. [372] *Cryptoglaux acadica* (Gmel.). Saw-whet Owl.*

Rare resident. August 20, 1884. One was taken in the University power plant November 27, 1886 (C. H. B.).

69. [373] *Megascops asio* (Linn.). Screech Owl.*

Common resident. Breeds. The red phase prevails. With the exception of the fall of 1900 this has been a rare bird here in the last few years.

This is the fellow who can best explain the meaning of the series of fan-like scratches which we see after a fresh fall of snow on either side of two parallel rows of tiny dots which end in a little carmine punctuated pit—the shambles of a *Peromyscus*. A Screech Owl which had the sad affliction of a cataract on one eye was placed in a roomy cage with two whitefooted mice with which to satisfy his appetite. Morning dawned on the scene of an unexpected tragedy. Two mice, with golden coats and pretty white stockings, were nestled in a warm bed of bright rufous feathers, sleeping away the effects of a banquet of owl.

70. [375] *Bubo virginianus* (Gmel.). Great Horned Owl.

Common resident (C. H. B. and B. W. E.). Breeds (W. S. B.). As in the case of the other *Striges*, rare since 1900. The only recent date is March 22, 1903 (P. J. H.).

The following epitaph is of interest: "‘Old Bubo,’ the college pet. Caught in a steel trap in September, 1885, and kept in the basement of Owen Hall until January, 1886, when he died."

71. [376] *Nyctea nyctea* (Linn.). Snowy Owl.

Rare winter visitor (C. H. B. '86.). Last date, January 25, 1903 (P. J. H.).

72. [387] *Coccyzus americanus* (Linn.). Yellow-billed Cuckoo.*

Common summer resident. April 13 to Sept. 24. Breeds. A nest of the Yellow-billed Cuckoo was found May 30, 1901. It contained one egg on that day and two on the next. It was in a spice-bush three feet above the ground and was built of sticks and partly lined with leaves (W. L. H.). May 25, 1903, a nest and two eggs were found about seven feet up in a grapevine (C. G. L.). In 1885 a nest with fresh eggs was found as late as June 30, by B. W. Evermann (Butler). "The usual nest is a mere pretense, a flimsy structure of a few sticks, with a few blossoms, generally of the oak, upon which to lay the eggs. Occasionally a very substantial nest is built—one such was found at Bloomington, Ind., by my friend, Mr. O. M. Meyneke" (Butler).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1892.	1893.
Observer.....	C. H. B.	C. H. B.	G. G. W.	E. M. K.	E. M. K.
First seen	5-17	.....	4-13	5-7	5-15
Next seen	5-19	.....	5-5*	5-13	5-21
Common	5-24	.....	.....	.....	.....
Last seen .....	.....	9-24	.....	.....	.....
Abundance	Very common.	Very common.	Common. *B. W. E.	Common.	Common.

Year	1899.	1900.	1902.	1902.	1903.
Observer.....	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-28	5-15	5-5	.....	5-5
Next seen	4-29	5-16	.....	.....	5-10
Common	5-4	5-17	5-10	.....	5-13
Last seen .....	.....	.....	.....	9-21	.....
Abundance	Common.	Common.	Common.	Common.	Common.

73. [388] *Coccyzus erythrophthalmus* (Wils.). Black-billed Cuckoo.* Fig. 11.

Common summer resident. May 12 to Sept. 22. Breeds. May 20, 1903, C. G. Littell found a nest and three eggs about eight feet up in a cedar. The nest was a mere platform.

In 1887 B. W. Evermann said that this species was apparently more common than the last. If there is any difference in numbers at present the Black-billed Cuckoo is the more rare of the two species. All records since 1892 show the same state of affairs. In 1894, E. M. Kindle considered this bird rare and the last common in Brown County. At this place the present species is a much more regular migrant than the Yellow-billed Cuckoo. Records of five springs show that it arrived either on the 12th or 13th of May. May 12, 1893, Mr. E. M. Kindle heard them calling as they passed over, and on April 13, 1886, Mr. G. G. Williamson heard the calling of Cuckoos, "Yellow or Black-billed or both." This is much the earliest date that has been recorded for either species within the State. In all probability the birds heard were Yellow-billed Cuckoos, as they are much more irregular than the Black-billed in the time of their arrival and are always observed earlier.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1892.	1893.	1902.	1903.
Observer	C. H. B.	C. H. B.	B. W. E.	E. M. K.	E. M. K.	W. L. M.	W. L. M.
First seen	5-12	.....	5-13	5-13	5-12	.....	5-12
Next seen	5-16	.....	.....	.....	.....	.....	5-13
Common	5-19	.....	.....	.....	.....	.....	.....
Last seen .....	.....	9-22	.....	.....	.....	9-21	.....
Abundance	Abund.	Abund.	Very com.	Com.	.....	Com.	Com.

74. [390] *Ceryle alcyon* (Linn.). Belted Kingfisher.

Common summer resident; rare winter resident. March 5 to November 9. Jan. 4, 1893 (E. M. K.). Breeds. The females become numerous in spring before the males.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1892-3.
Observer	C. H. B.	C. H. B.	B. W. E.	G. G. W.	E. M. K.	E. M. K.
First seen	3-31	.....	3-22	3-26	3-27	.....
Next seen	4-3	.....	3-25	.....	4-27	.....
Common .....	.....	.....	.....	.....	4-27	.....
Last seen .....	.....	11-5	.....	.....	.....	1-4, '93
Abundance	Common.	Very common.	Rare.	.....	Common.	.....

Year.	1893.	1900.	1902.	1902.	1903.	1903.
Observer	E. M. K.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	3-12	4-18	4-9	.....	3-5	.....
Next seen	4-26	4-28	4-19	.....	3-6	.....
Common .....	.....	.....	.....	.....	4-7	.....
Last seen .....	.....	.....	.....	11 9	.....	11-7
Abundance	Common.	Not very common.	Scarce.	Common.	Common.	Common.

75. [393] *Dryobates villosus* (Linn.). Hairy Woodpecker.*

Common resident; breeds. A less familiar bird than the next, but it is occasionally seen in the city. But his contact with civilization generally gives him a dingy color and a ruffled coat.

76. [394] *Dryobates pubescens* (Linn.). Southern Downy Woodpecker.*
Fig. 12.

Common resident; breeds. Possibly more common than the last; apparently so because of its more confiding attitude towards man. Nest and one egg in a rail April 23, 1903 (C. G. L.). But the nest has been found with only two eggs in it as late as May 15, 1901.

77. [402] *Sphyrapicus varius* (Linn.). Yellow-bellied Sapsucker.*

Regularly a very common migrant; occasionally a common winter resident. Eight were seen January 21, 1903, in a group of cedars and pines less than an acre in area. It did not winter in 1901-1902. B. W. Evermann gives it as a rare resident, and W. S. Blatchley says it breeds. There are no later dates in spring, however, than May 1, 1903 (W. L. M.), and May 5, 1885 (C. H. B.). It was observed mating April 8, 1903 (W.

L. M.), but it would be an unusual occurrence for it to breed this far south. According to C. H. Bollmann's schedule for 1885 the males arrive and depart earlier than the females.

MIGRATION RECORD.

Year	1885.	1885.	1885.	1886.	1887.
Observer	C. H. B.	C. H. B.	C. H. B.	G. G. W.	G. G. W.
First seen	♂ 3-27	♂ 4-2	9-15	3-15	3-31
Next seen	3-31	4-3	9-24	3-25*	4-1
Common	4-4	4-4	9-25	.....	.....
Last seen	4-19	5-3	12-29*	.....	.....
Abundance	Common.	Common.	Very common	Rare. *W. S. B.	.....

Year	1892.	1900.	1901.	1902.	1903.
Observer	E. M. K.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-1	4-7	1-7	3-14	.....
Next seen	4-17	4-10	2-2	3-22	.....
Common .....	.....	4-10	4-7*	3-27	4-12
Last seen .....	.....	.....	.....	4-23	5-1
Abundance	Common	Common.	 *V. H. B.	Common.	Tolerably Common.

78. [405a] *Ceophloeus pileatus abieticola* Bangs. Northern Pileated Woodpecker.

Quite rare resident; very probably breeds. Although it is now restricted to the wildest and least visited parts of the county and is present there in but small numbers, it must have been tolerably common as late as 1885. Seven specimens were taken that year—March 21, March 22, a male; March 29, a male and a female (C. H. B.); two specimens were taken along Bean Blossom Creek in August (B. W. E.), and one

was seen December 24, by W. S. Blatchley. It has been seen or taken several times since; all the dates follow: November 3, 1887, J. Graham; February 13, 1892, two seen, one of which, a female, was taken, A. B. Ulrey; one seen in 1898 and one about February 7, 1901, V. H. Barnett; two seen and one, a male, taken January 20, 1903, by Mr. Whitaker. The last specimen was winged and brought in alive. It hammered to pieces the pine box used for a cage and escaped into the streets. After several adventures it was with difficulty recaptured and placed in a wire cage at the University. He tried to shatter this, too, but of course was unsuccessful. His accuracy was shown by his repeatedly pecking a wire, not more than one-sixteenth of an inch in diameter, which he hit squarely every time. He lived about three days in captivity. Two of these noble birds were also seen on May 17, 1904. In a steady majestic flight they winged their way across some fields and a highway that lay between two dense forests, their favorite retreats.

79. [406] *Melanerpes erythrocephalus* (Linn.). Red-headed Woodpecker.*

Abundant summer resident; not uncommon winter resident. All of the Redheads sometimes migrate in the fall, and leave us no winter residents. Such was the case in the years 1892 and 1903. The autumn of the latter year was noticeable for the very scanty production of beechnuts and acorns. In 1893 after their winter's absence they were first seen April 19 and became abundant April 28 and 29 (E. M. K.). For three years prior to 1903 the Redhead was a very common winter resident, in fact, the most common and most equally distributed winter bird. It became common each year from the middle of February to the 1st of March.

The mating call was heard as early as February 15, 1903. The nest and five eggs were found May 29, 1903 (C. G. L.).

Redheaded Woodpeckers are very quarrelsome, and are continually driving other birds from their favorite trees. Their attentions seem especially directed against their little cousin, the Downy, although Junco, Tufted Titmice and Nuthatches are not slighted. They have been observed to come to the ground to attack a Tufted Titmouse. They are capable of making as large an animal as the Fox Squirrel beat a hasty retreat. Sparrow Hawks, too, are put to flight, but the Red-headed tyrant often finds his master in the English Sparrow.

There is nothing in the Redhead to suggest the flycatcher, but he really is an expert in that line. A flash of color often attracts your eye to a nearby treetop, and you see that it is the Redhead, who is diminishing the insect population. In one or two or three swoops, as gracefully as Myiarchus himself, he obtains his luncheon.

80. [409] *Centurus carolinus* (Linn.). Red-bellied Woodpecker.*

Common summer resident; less common winter resident. An increase in number is noticeable about the middle of March. Common April 8, 1903.

A very garrulous bird; a single individual often fills the woods with a din of his varied cries; stimulation and excitement are not needed to provoke a demonstration but he seems to do it for the pure love of making a racket.

81. [412a] *Colaptes auratus luteus* Bangs. Northern Flicker.* Fig. 13.

Abundant summer resident and very common winter resident. Becomes abundant in March. Mating call heard as early as February 15, 1903, and as late as November 20, 1902. A nest and two eggs were found in an apple tree April 22, 1903 (C. G. L.).

82. [417] *Antrostomus vociferus* (Wils.). Whip-poor-will.*

Rather common summer resident, but on account of its peculiar habits not commonly observed.

MIGRATION RECORD.

Year	1885.	1886.	1892.	1893.	1899.	1903.
Observer	C. H. B.	W. S. B.	E. M. K.	E. M. K.	N. B. M.	W. L. M.
First seen	5-17	4-21	5-7	4-29	4-25	4-29
Next seen	5-22	4-23*	5-13	5-3	.....	4-30
Common	5-27	.....	.....	.....	.....	.....
Last seen .....	.....	.....	.....	.....	.....	.....
Abundance	Common.	Common.	Not common	.....	.....	Common.
		*C. H. B.				

83. [420] *Chordeiles virginianus* (Gmel.). Night Hawk.*

Common summer resident. (C. H. B.) April 28 to Sept. 21. Abundant migrant, especially in fall.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1892.	1893.
Observer.....	C. H. B.	C. H. B.	G. G. W.	E. M. K.	E. M. K.
First seen.....	5-15	.....	5-6	5-6	5-10
Next seen.....	5-17	.....	.....	5-13	5-12
Common.....	5-22	.....	.....	5-13	.....
Last seen.....	.....	9-21	.....	.....	.....
Abundance.....	Abundant	Abundant	Abundant.	Common.	Common.

Year.....	1899.	1901.	1902.	1903.
Observer.....	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	5-14	5-20	.....	4-28
Next seen.....	5-26	5-23	.....	.....
Common.....	.....	.....	.....	.....
Last seen.....	.....	.....	9-13	.....
Abundance.....	Common.	Common.	Abundant.	.....

84. [423] *Chætura pelagica* (Linn.). Chimney Swift.*

Abundant summer resident. April 4 to October 14. April 4, 1892 (E. M. K.) is as early as it has been reported from the State, while October 14, 1902, is the latest date for the State. On the latter date one was found clinging to a maple tree in the campus. It was quite numb and offered no resistance when picked up. It quickly recovered its vitality in a warm room, however. The outside temperature was 64°.

Nestbuilding April 24, 1903. Nest and five eggs found June 5, 1903 (C. G. L.) in a large chimney about six feet from the top.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1892.	1893.
Observer.....	C. H. B.	C. H. B.	B. W. E.	E. M. K.	E. M. K.
First seen	4-6	.....	4-11	4-4	4-7
Next seen.....	4-7	.....	4-14*	4-17	4-8
Common.....	4-17	.....	.....	.....	.....
Last seen .....	.....	10-13	.....	.....	.....
Abundance	Abundant.	Abundant.	Abundant. *G. G. W.	Common.	Common.

Year.....	1899.	1902.	1902.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-19	4-15	.....	4-8
Next seen	4-20	4-18	.....	4-9
Common	4-26	4-15	.....	4-10
Last seen .....	.....	.....	10-14	.....
Abundance.....	Common.	Abundant.	Abundant.	Abundant.

85. [428] *Trochilus colubris* Linn. Ruby-throated Hummingbird.*

Common summer resident. April 29 to September 26. The males migrate about a week ahead of the females. Nest and two eggs May 15, 1902.

MIGRATION RECORD.

Year	1882.	1885.	1885.	1885.	1886.	1892.
Observer	B. W. E.	C. H. B.	C. H. B.	C. H. B.	G. G. W.	E. M. K.
First seen.....	5-13	♂ 4-29	♂ 5-8	.....	4-29	4 29
Next seen.....	.....	4-30	5-9	.....	4-30*	.....
Common .....	.....	5-13	.....	.....	.....	.....
Last seen.....	.....	.....	.....	9-14	.....	.....
Abundance.....	Common.	Abundant.	Abundant.	Abundant.	*C. H. B.	Not very common.

Year.....	1900.	1901.	1902.	1903.
Observer.....	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	5-5	5-4	5-5	.....
Next seen	5-8	5-7	5-6	.....
Common.....	5-10	5-15	.....	.....
Last seen.....	.....	.....	.....	9-26
Abundance.....	Common.	Common.	Moderately common.	Common.

86. [444] *Tyrannus tyrannus* (Linn.). Kingbird.* Fig. 14.

Common summer resident. April 13 to September 5. Mating April 29, 1903. Nest and four eggs on the topmost limb of an apple tree, May 28, 1903 (C. G. L.).

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1892.
Observer.....	C. H. B.	C. H. B.	W. S. B.	G. G. W.	E. M. K.
First seen.....	4-17	.....	4-13	4-24	4-18
Next seen.....	4-20	.....	4-14*	.....	4-27
Common	4-23	.....	4-15†	.....	4-27
Last seen .....	.....	9-5	.....	.....	.....
Abundance.....	Abundant.	Abundant.	Common. *G. G. W. †C. H. B.	.....	Common.

Year.....	1893.	1900.	1901.	1903.
Observer.....	E. M. K.	N. B. M.	W. L. M.	W. L. M.
First seen	4-16	4-23	4-30	4-19
Next seen	4-26	4-28	5-4	4-29
Common .....	.....	.....	5-6	4-29
Last seen .....	.....	.....	.....	.....
Abundance	Common.	Common.	Common.	Common.

87. [452] *Myiarchus crinitus* (Linn.). Crested Flycatcher.*

Common summer resident. April 18 to September 7. Nestbuilding May 14, 1901; six eggs May 27. In 1902 a nest and 5 eggs were found May 21; the eggs were hatched June 2 and the young birds had flown June 11 (Gertrude Hitze). Another nest with six young about ready to leave was found June 12. It was in a hollow apple tree about 6½ feet up (C. G. L.).

Later in the season, in August and September, these birds may be seen trooping around with a brood of lusty youngsters almost as large as themselves. These little family groups are pleasing objects in the sultry brightness of an open grove or beside the dimly lighted paths of the forest. *Myiarchus* here, as at all places and all times, seems to fit into his surroundings perfectly. Everywhere he is full of unconscious dignity and is perfectly at home.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	G. H. B.	G. G. W.	E. M. K.	E. M. K.
First seen	4-21	.....	4-23	4-25	4-24	4-18
Next seen	4-22	.....	4-24	.....	4-27	.....
Common	4-25	.....	.....	.....	4-27	4-26
Last seen .....	.....	9-7	.....	.....	.....	.....
Abundance	Abundant.	Very common	Common	.....	Very common	Common.

Year	1899.	1900.	1901.	19 2.	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-22	5 6	5-6	4-27	4-28
Next seen	4-28	5-7	5-7	4-28	4-29
Common	5-3	5-8	5-9	4-27	4-29
Last seen .....	.....	.....	.....	.....	.....
Abundance	Common.	Common	Common.	Common.	Common.

88. [456] *Sayornis phæbe* (Lath.). Phœbe.* Fig. 15.

Common summer resident. March 1 to October 17. An early migrant and an early breeder. B. W. Evermann gives the date March

1, but does not give the year, although it is probably 1887. E. M. Kindle saw it March 2, 1893. They are found first at the nesting places: March 17, 1901, a pair was seen at a quarry; March 14, 1902, one was seen at a bridge near a pond and on the first date in 1903, March 12, they were common at the caves; eleven were seen about the mouths of three caves. Nestbuilding March 22, 1902. Nest complete April 2, 1903. April 12, 1903, a nest and five eggs were found under a bridge (C. G. L.). Well-grown young have been seen May 6, 1899 (N. B. M.), and May 7, 1901.

The Phoebe seems to be better pleased if a suitable nesting site can be found near the dwellings of man. There he lives out his quiet and beneficial career, an unobtrusive yet confiding bird.

MIGRATION RECORD.

Year	1884.	1885	1885.	1886.	1887.	1892.
Observer	C. H. E.	C. H. B.	C. H. B.	W. S. B.	G. G. W.	V. H. B.
First seen	3-18	3-21	.....	3-10	3-20	3-25
Next seen .....	.....	3-22	.....	3-14 ^a	.....	3-26 ^a
Common .....	.....	3-31	.....	3-16†	.....	3-29
Last seen .....	.....	.....	10-17	.....	.....	.....
Abundance .....	.....	Abundant.	Abundant.	Common. ^a B. W. E. †G. G. W.	.....	Common. ^a E. M. K.

Year	1893.	1899.	1901.	1902.	1902.	1903.
Observer	E. M. K.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	3-2	4-13	3-17	3-14	.....	3-6
Next seen	3-10	5-14	3-24	3-16	.....	3-12
Common	3-10	.....	.....	3-27	.....	3-12
Last seen .....	.....	.....	.....	.....	10-12	.....
Abundance	Common	Common.	Common.	Common.	Common.	Common.

89. [459] *Nuttallornis borealis* (Swains.). Olive-sided Flycatcher.

Rare transient. April 30, 1885 (C. H. B.). The only other record for the southern part of the State is that of May 12, 1885, Wheatland, Knox County (Robert Ridgway). Do these dates indicate an accidental deviation from the ordinary migration route in that one year?

90. [461] *Contopus virens* (Linn.). Wood Pewee.*

Very common summer resident. April 26 to October 5. Has been reported much earlier, as for instance: April 15, 1899, and April 7, 1900 (N. B. M.), but these records are probably due to wrong identification. The most common Flycatcher.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1892.	1893.
Observer.....	C. H. B.	C. H. B.	C. H. B.	E. M. K.	E. M. K.
First seen	5-3	.....	4-26	5-18	5-6
Next seen	5-5	.....	4-27	.....	.....
Common.....	5-16	.....	4-28 ^a	.....	.....
Last seen .....	.....	10-3	.....	.....	.....
Abundance	Abundant	Abundant.	Common. ^a B. W. E.	Common.	.....

Year	1900.	1902.	1902.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	5-2	4-27	.....	4-28
Next seen	5-8	.....	.....	5-10
Common	5-8	.....	.....	5-10
Last seen .....	.....	.....	10-5	.....
Abundance	Common.	Common.	.....	Common.

91. [463] *Empidonax flaviventris* Baird. Yellow-bellied Flycatcher.

Rather common migrant. April 17 to August 29. These dates represent the extremes of arrival and departure for the State as well as for the county.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1892.	1903.
Observer.....	C. H. B.	C. H. B.	W. S. B.	A. B. U.	W. L. M.
First seen.....	4-28	8-26	4-17	5-7	4-28
Next seen.....	5-1	8-27	.....	.....	4-29
Common.....	.....	.....	.....	.....	.....
Last seen.....	5-19	8-29	.....	.....	.....
Abundance.....	Common.	Common.	.....	.....	Not common

92. [465] *Empidonax virescens* (Vieill.). Green-crested Flycatcher.*

Common summer resident. April 15 to September 18. Considered abundant by C. H. Bollmann and B. W. Evermann in 1886 and 1887. There are four nests, two with eggs, in the University collection.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.
Observer.....	C. H. B.	C. H. B.	B. W. E.	B. W. E.
First seen.....	5-14	.....	4-27	4-15
Next seen.....	5-15	.....	5-1*	.....
Common.....	5-16	.....	5-4†	.....
Last seen.....	.....	9-18	.....	.....
Abundance.....	Abundant.	Abundant.	Abundant.	Abundant.
			*C. H. B. †W. S. B.	

Year.....	1892.	1900.	1903.
Observer.....	A. B. U.	N. B. M.	W. L. M.
First seen.....	5-7	5-2	.....
Next seen.....	.....	5-7	.....
Common.....	.....	5-8	6-9
Last seen.....	.....	.....	.....
Abundance.....	.....	Common.	Common.

93. [466] *Empidonax traillii* (Aud.). Traill's Flycatcher.

"In Monroe County, Prof. Evermann found it an uncommon summer resident" (Butler).

MIGRATION RECORD.

Year.....	1885.	1885.
Observer.....	C. H. B.	C. H. B.
First seen.....	5-14	.....
Next seen.....	5-15	.....
Common.....	.....	.....
Last seen.....	.....	8-27
Abundance.....	Not rare.	Not common

94. [467] *Empidonax minimus* Baird. Least Flycatcher.*

Common migrant. April 21 to May 19. September 12 to 18. It has been reported by two observers as a summer resident (B. W. E. and N. B. M.), but these records are probably wrong. The bulk of the species departed May 13, '85 (C. H. B.).

MIGRATION RECORD.

Year	1885.	1885.	1892.	1899.	1901.	1903.
Observer	C. H. B.	C. H. B.	E. M. K.	N. B. M.	W. L. M.	W. L. M.
First seen.....	4-21	9-12	5-3	5-5	4-23	4-29
Next seen.....	4-23	9-13	5-7*	.....	.....	4-30
Common.....	4-30	9-15	.....	.....	.....	.....
Last seen.....	5-19	9-18	.....	.....	.....	5-13
Abundance.....	Abundant	Common.	.....	.....	Common.	Common.
			*A. B. U.			

95. [474b] *Otocoris alpestris praticola* Hensh. Prairie Horned Lark.*

Common resident; more abundant in winter and during the migrations. They became common March 26, 1903. Many notes are given under the name *Otocoris alpestris*, but this is probably due to faulty nomenclature; all such notes were considered as referring to the subspecies, although it is not improbable that *O. alpestris* will be found here in winter.

March 25, 1902. The Horned Larks were singing continually, and one of them was observed in his aerial evolutions. About dusk one began: singing all the time, flitting upward a little way, then poised

on stretched and quivering wing, then up again and poising, until he was nearly out of sight. The climax was a straight, swift dive, with wings closed, toward the earth. He did not open his wings until he was within a few feet of the ground, when he settled lightly down and went quietly to feeding as if nothing had happened. Four young were seen just ready to leave the nest May 10, 1903. G. G. Williamson obtained an adult female and a young male May 29, 1886.

96. [477] *Cyanocitta cristata* (Linn.). Blue Jay.* Fig. 16.

Abundant resident; sometimes less numerous in winter.

Jays were nearly all mated March 8, 1903, and a pair was observed mating February 16, 1901. This pair began a nest but abandoned it when about one-fourth completed, February 22. N. B. Myers observed them nestbuilding March 3, 1899. More usual dates are: Nestbuilding, March 17, '03; March 22, '02, a half-completed nest was found; nest completed March 26, 1902, and 1903; three pairs nestbuilding April 1, '01; nests with three eggs were found April 15 and 17, 1903 (W. L. M.). The former was between two rafters in a corner and was built partly of mud (C. G. L.). A Blue Jay was seen sitting on unhatched eggs May 16, 1903.

"As spring approaches they become very vocal, uttering many calls, some very pretty notes, varying from loud to low. Evidently some of the latter are intended solely for one female to hear. * * * With us the season of song begins early in March * * * as early as March 8. * * * With it comes pairing time, which I have known them to continue until April 25" (A. W. Butler). As is above stated the Blue Jay has a great number of calls, many of which are principally used during the mating season. But the writer has never heard a Jay give a call during that season that has not been heard during every other month from September to June at some time during the past four years. Careful observations and a separate series of notes have been made with the above conclusion as a result.

On April 28 and 29, 1903, at a time of very abundant nocturnal migration, many Jays were seen migrating by day. They flew steadily and quite high (about 200 ft.), in a northeast direction. The flight of the 29th was exactly similar to that of the 28th; no Jays were even 200 yards from the path. Whether the flight kept up all night is a question. Following are a few groups observed on each day and the approximate time elapsing between their passage of a given point: April

28—12; immediately, 3; 1 minute, 8; 4 minutes, 8; 15 minutes, 11. April 29—3; 2 minutes, 9; 1 minute, 2; etc. The woods below were furnished with their usual numbers of noisy Jays; but neither migrants nor residents seemed to be influenced by the presence of the other.

97. [488] *Corvus brachyrhynchos* C. L. Brehm. Common Crow.*

The crow is quite common in Monroe County, but the numbers in which it occurs seem insignificant to one accustomed to enormous roosts. Crows are very rarely seen in flocks of as many as one hundred individuals. About 1886 there was quite an extensive roost in Turner's (Cedar) Grove (W. S. B.), but at the present time there is no roost of any size in the county.

The nest has been noted by B. W. Evermann as early as March 20. A half-finished nest was seen April 4, 1903 (C. G. L.). Two nests, one with eggs were found April 20, 1902 (W. L. M.), and a nest with 5 young was found about fifty feet from the ground in a beech, April 26, 1903 (C. G. L.).

98. [494] *Dolichonyx oryzivorus* (Linn.). Bobolink.*

Common migrant, usually appearing during the first week of May, although it has been observed on April 17, 1885 (C. H. B.) and 1893 (E. M. K.). It may be observed until a month later; May, 17 (C. H. B., '85). August 29 to September 1. The males arrive and depart earlier than the females; males were seen from April 17 to May 5 and females from May 2 to 17, 1885 (C. H. B.).

On a rainy morning in May (5-3-'03) a Bobolink was found in an apple tree in town, singing with all the vivacity of mid-June. This is the first time I have heard it sing during migration.

MIGRATION RECORD.

Year	1882.	1883.	1885.	1885.	1885.	1886.
Observer	B. W. E.	B. W. E.	C. H. B.	C. H. B.	C. H. B.	Bicknell.
First seen	5-6	5-6	♂ 4-17	♂ 5-2	8-29	5-3
Next seen			5-2	5-4	9-1	5-4*
Common		5-6				5-5†
Last seen			5-5	5-17		
Abundance	Ratherrare	Common.	Common.	Common.	Common.	Common. *C. H. B. †G. G. W.

Year	1887.	1888.	1893.	1901.	1902.	1903.
Observer	G. G. W.	Butler.	E. M. K.	W. L. M.	W. L. M.	W. L. M.
First seen	5-1	5-6	4-17	5-6	5-5	5-2
Next seen	5-4	.....	5-6	5-10	.....	5-3
Common .....	.....	.....	.....	5-13	5-10	5-14
Last seen .....	.....	.....	.....	5-13	.....	5-14
Abundance	Common.	.....	.....	Common.	Common.	Common.

99. [495] *Molothrus ater* (Bodd.). Cowbird.*

Abundant summer resident. March 7 to October 17. Eggs found as early as April 22 ('86 B. W. E.). The Cardinal and Indigo Bunting seem to be the coerced foster-parents more often than other birds of this region.

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. E.	C. H. B.	C. H. B.	B. W. E.	G. G. W.	E. M. K.	E. M. K.
First seen	3-23	4-8	.....	3-7	3-23	3-25	3-11
Next seen .....	.....	4-9	.....	3-14	.....	4-9	3-19
Common .....	.....	4-12	.....	.....	.....	4-27	.....
Last seen .....	.....	.....	10-17	.....	.....	.....	.....
Abundance .....	.....	Abundant.	Abundant.	Common	.....	Common	Common

Year	1899.	1900.	1901.	1902.	1902.	1903.
Observer	N. B. M.	N. B. M.	V. H. B.	W. L. M.	W. L. M.	W. L. M.
First seen	4-15	4-7	3-23	3-14	.....	3-17
Next seen	4-17	4-12	3-25*	3-25	.....	3-21
Common	4-27	4-28	.....	4-9	.....	3-21
Last seen .....	.....	.....	.....	.....	9-1	.....
Abundance	Common.	Common.	Common.	Abundant.	Abundant.	Abundant.
			*W. L. M.			

100. [498] *Agelaius phoeniceus* (Linn.). Red-winged Blackbird.*

Abundant migrant and common summer resident. March 4 to November 16. There are two nests each containing two eggs in the University collection taken by C. H. Bollman, 1885. A bird with striking dress and musical call, as often observed remote from as near bodies of water during the migrations.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	B. W. E.	G. G. W.	E. M. K.	E. M. K.
First seen	3-11	.....	3-4	4-2	3-26	4-26
Next seen	3-14	.....	3-7	.....	4-2 ^a	.....
Common	3-16	.....	.....	.....	4-12	.....
Last seen .....	.....	11-16	.....	.....	.....	.....
Abundance	Abundant.	Abundant.	Not common	.....	Not common *A. B. U.	Not very common.

Year	1900.	1901.	1902.	1902.	1903.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	3-11	3-17	3-4	.....	3-5	.....
Next seen	3-22	3-24	3-9	.....	3-6	.....
Common	3-23	5-4	3-10	.....	3-7	.....
Last seen .....	.....	.....	.....	11-4	.....	11-7
Abundance	Not very common.	Abundant.	Abundant.	Abundant.	Abundant.	Abundant.

101. [501] *Sturnella magna* (Linn.). Meadowlark.* Fig. 17.

The Meadowlark is an abundant summer resident and not uncommon winter resident. It becomes abundant at some time from January to March: January 21, 1903 to March 16, 1899 (N. B. M.).

They have been observed gregarious and with no tendency to pairing March 31, and mated April 7 in the same year. The nest with full complement of eggs was found May 1, '03 (C. G. L.); May 7, '01; and four young and an egg were found May 10, '01. They seem to be careless sometimes in regard to the disposal of the eggs. A nest with four young was found May 27, '01 (W. L. H.); two days later the young

were all there, still covered with down, but when the nest was disturbed, two eggs rolled out of the feathers about the nest.

"I have known them in full song March 8. * * * After the harvest is over and the young are able to take care of themselves, most of the Meadowlarks seek choice spots, and but seldom are their songs heard" (Butler). Butler also mentions hearing their song in September and November. The writer has heard them singing every month in the year, nine of which are spent in this region. Following are some dates for Bloomington: 9-28; 10-12; 11-8; 12-18, '02; 1-24; 2-26; 3-2; 4-3; 5-1; 6-9, '03.

The Meadowlark is another bird which migrates considerably by day. The immense, noisy flocks of February and March are always on the move. Fifty of these birds were seen as early as January 21, 1903, flying over due north at a height which made it necessary to use a powerful field-glass to identify them.

This species, as well as most of the members of the family *Icteridae*, is noted for its gregarious habits. That the different species should show such habits *inter se*, as do the swallows, is a more remarkable thing. That this seems to be the case is the only logical conclusion to be drawn from a study of local migration schedules. For instance, for a few days previous to March 21, 1903, Meadowlarks and Grackles, both resident species were the only *Icteridæ* seen. On the 21st, however, these species became augmented in numbers while Rusty Grackles, Redwings and Cowbirds, not seen for several days before, again made their appearance in considerable numbers. This family migration is to be observed in the *Icteridæ* at the time the species become abundant and not at their first arrival. The Orioles move together in the same way and become numerous at about the same time.

102. [506] *Icterus spurius* (Linn.). Orchard Oriole.*

Common summer resident, abundant and conspicuous during the spring migration. April 17 to August 29. These dates are each one day earlier than the recorded limits of its stay in the State. Six years out of ten, this species arrived before the Baltimore Oriole. This is a somewhat different proportion than the two out of fifteen obtained by A. W. Butler. The difference may be explained by a change in habit, as the dates of arrival of the Orchard Oriole before that of its relative are all included in the last seven years in which observations have been made at this point. This change in date of arrival is probably correlated with the

steady increase in numbers in this species and decrease in the next (*vide* Butler, Birds of Ind., p. 899).

The first song was heard April 28, 1903, and males in the second year plumage were seen singing April 29 and May 10, 1903. The Orchard Oriole is an abundant breeder here; the nest and complement of eggs have been found May 17, 1901.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1886.	1887.	1892.
Observer	C. H. B.	C. H. B.	C. H. B.	G. G. W.	G. G. W.	E. M. K.
First seen	4-21	.....	4-22	.....	4-24	4-26
Next seen	4-22	.....	4-23*	.....	4-27	.....
Common	4-28	.....	.....	.....	.....	.....
Last seen .....	.....	8-29	.....	8-14	.....	.....
Abundance	Abundant.	Abundant.	Common.	.....	.....	.....
			*G. G. W.			

Year	1893.	1899.	1900.	1901.	1902.	1903.
Observer	E. M. K.	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-17	4-22	4-24	4-28	4-28	4-24
Next seen .....	.....	4-27	4-25	4-29	4-30	4-28
Common .....	.....	4-29	.....	5-3	5-4	4-28
Last seen .....	.....	.....	.....	.....	.....	.....
Abundance .....	.....	Common.	Common.	Common.	Abundant.	Abundant.

103. [507] *Icterus galbula* (Linn.). Baltimore Oriole.*

A rather abundant migrant and moderately common summer resident. April 18 to September 2. C. H. Bollman in 1886 and B. W. Evermann in 1887 indicated in their lists that this species was more abundant than the last. The reverse is the case now. A quite regular migrant but it has arrived on the average about a week later since 1890 than it did during the eighties. Not nearly so common a summer resident as the last. Song April 28, 1903. June 8, 1903 nest found hanging in an inaccessible position, on the end of an elm limb about 80 feet from the ground. The bird was incubating I believe (C. G. L.).

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1887.	1892.
Observer	B. W. E.	C. H. B.	C. H. B.	C. H. B.	B. W. E.	E. M. K.
First seen	4-20	4-20	.....	4-20	4-20	4-28
Next seen .....	.....	4-21	.....	4-22	4-27*	5-7
Common .....	.....	4-24	.....	4-24*	.....	.....
Last seen .....	.....	.....	9-2	.....	.....	.....
Abundance	Common.	Abundant.	Abundant.	Common. *B. W. E.	*G. G. W.	Rare.

Year.	1893.	1899.	1900.	1901.	1902.	1903.
Observer	E. M. K.	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-24	4-26	4-18	5-6	4-29	4-28
Next seen	4-25	4-27	4-19	5-7	5-3	4-29
Common .....	.....	4-28	4-21	5-15	.....	4-29
Last seen .....	.....	.....	.....	.....	.....	.....
Abundance	Rare.	Common.	Common.	Moder'tely Common.	Moder'tely Common.	Common.

104. [509] *Euphagus carolinus* (Müll.). Rusty Blackbird.*

Rather common migrant. March 8 to May 16. November 15 to 21.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1901.	1902.	1903.
Observer	C. H. B.	C. H. B.	B. W. E.	G. Hubbard	W. L. M.	W. L. M.
First seen	3-14	11-15	3-14	3-17	3-16	3-8
Next seen	3-17	11-16	.....	.....	3-25	3-17
Common	3-18	.....	.....	.....	.....	.....
Last seen	4-12	11-21	.....	.....	4-19	5-16
Abundance	Abundant.	Common.	Rare.	.....	Tolerably Common.	Tolerably Common.

105. [511b] *Quiscalus quiscula-ironeus* (Ridgw.). Bronzed Grackle.*

Abundant summer resident and uncommon winter resident. Following are the numbers seen at some winter dates: 2, 12-30-'84 (C. H. B.), 1-11-'85 (C. H. B.); 1 taken, 1-4-'86 (G. G. W.); and 24, 1-17-1903. Of the last flock, 15 were females, and 9 were males; there were also more females than males in a flock of 30 seen November 30, 1902. On the other hand the first migrants in spring are all great, splendid males in full song. Twenty-six seen February 20, 1903. For a period after the beginning of migration the females are absent. They were not seen until March 8, 1901; March 23, 1902. Grackles become abundant during the first week of March.

A half-finished nest was found April 4 and a nest with three young was found May 13, 1903, in a pine, about 50 feet from the ground (C. G. L.).

Grackles roost in great numbers in the shade-trees of Bloomington and in early spring and in fall many Robins roost in the same places. The calls of the Grackle, both the *chuck* and the metallic notes may be heard at intervals after dark. I have heard them as late as 11 p. m. and as early as 3 a. m. and would not be surprised to learn that they are continued throughout the night.

106. [514] *Hesperiphona vespertina* (Coop.). Evening Grosbeak*.

Very irregular and rare visitor. Seen only in January and April, 1887. Mr. C. H. Bollman took a male on the University campus, January 20, 1887. Mr. G. G. Williamson saw the following numbers during April: 4 on the 27th; 2 on the 29th; and 2 on the 30th.

107. [517] *Carpodacus purpureus* (Gmel.). Purple Finch.

Common migrant and irregular winter resident. B. W. Evermann classes it as a frequent winter visitor and W. S. Blatchley says it wintered in 1882-3. It probably wintered in 1885-6, as no last date is given in the fall migration schedule, nor any first date in that of the spring. The females remain later than the males in spring. I have heard its song at Marion, Ind., March 8, 1900. More often observed in sycamore than in other trees. Most of them departed April 14, 1885 (C. H. B.).

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1901.	1902.	1903.
Observer.....	C. H. B.	C. H. B.	G. G. W.	W. L. M.	W. L. M.	W. L. M.
First seen.....	3-14	11-8	.....	3-17	.....	3-8
Next seen.....	3-27	12-20	.....	3-18	.....	3-18
Common.....	4-2	.....	.....	.....	.....	.....
Last seen.....	{ ♂ 4-25 ♀ 5-15	.....	4-30	4-7*	4-19	5-4
Abundance.....	Abundant.	.....	.....	Common. *V. H. B.	Common.	Common.

108. [521] *Loxia curvirostra minor* (Brehm). American Crossbill.

An exceedingly irregular species; has been found often in winter and has been reported a summer resident.

The Red Crossbill was first reported from Monroe County, February 10, 1883, by B. W. Evermann who says it was common for some time after that date. The same authority also says that it was common during the winter of 1883-4. In both the spring and the fall of 1885 they were quite common. C. H. Bollman's record of its movements in the spring is as follows: 8 males and females seen March 2 and 3; the arrival of the bulk from the north took place March 8 and both sexes were then common; in a letter to J. M. Wheaton he reported them still present March 13; and the last male was seen May 10 and the last female May 12. The bulk of the species departed April 15. From uncatalogued specimens in the collection of Indiana University the following additional dates were obtained: March 10; a male May 14. During the year 1885 it was also reported to have bred at Bloomington. "Mr. Sam Hunter reports a pair to have nested in a pine here in 1885. He says the nest was made exclusively of pine burrs" (E. M. Kindle.).

In the fall of 1885, C. H. Bollman reported the Red Crossbill October 4 and November 5, but gives no date for the last one seen, indicating that it remained throughout the winter, and, indeed, W. S. Blatchley reports it in his list of winter birds as a scarce resident during the winter of 1885-6. In the latter year, the first Crossbills were reported January 18, and fifteen or twenty were seen February 6 (G. G. W.). Crossbills, probably of this species, but not exactly identified were reported February 23

and March 8, 1886. C. H. Bollman saw eleven in a fir tree in Bloomington June 24, and reported them also on July 10, 13 and 14 (B. W. E.).

After being reported quite often during this period of 4 years, Crossbills were not again recorded until 1892, when six were observed by E. M. Kindle and A. B. Ulrey on March 1. The last date recorded for this locality is March 3, 1893 (E. M. K.), when a crossbill probably of this species, was identified by note.

109. [522] *Loxia leucoptera* Gmel. White-winged Crossbill.

A very irregular visitor, much more rare than the last.

White-winged Crossbills were first observed here February 6, 1883. On that date B. W. Evermann took two males from a flock of fifteen in a yard on College Avenue, Bloomington. A female was taken February 10, and "two days later two more specimens were taken near the same place." (A. W. Butler, in "Papers Read at the World's Congress of Ornithology" in Chicago, 1893-6.)

Mr. Evermann also observed this bird February 23 (List of Birds of Carroll County, "Auk," 1889). C. H. Bollman gives a queried record of this species for December 12, 1885. About five were identified by note.

A. W. Butler says: "The only instance of its occurrence in summer in the Ohio valley is that given me by the late C. H. Bollman. He saw eleven in a fir tree in Bloomington, Ind., June 24, 1886." However, on C. H. Bollman's schedule for 1886, this date is attributed to the other species, in the account of which I have placed it.

110. [528] *Acanthis linaria* (Linn.). Redpoll.

Irregular winter visitor.

"B. W. Evermann identified a single bird at Bloomington in December, 1882" (A. W. Butler). C. H. Bollman reports "one seen" in his list of 1886, and "Mr. Chauncey Juday obtained specimens from a flock of twenty at Bloomington, April 12, 1895" (A. W. Butler). W. S. Blatchley also reports one January 30, 1883.

111. [529] *Astragalinus tristis* (Linn.). American Goldfinch,*

Abundant resident.

Song March 29 (W. L. M., '02). June 12, 1902, a nest and four eggs in a wild rose bush (C. G. L.). October 2, 1903, I shot a young Goldfinch with the short wings and tail and fluffy feathers of a fledgeling, that was unable to fly well and was still being fed by the mother.

The plumage changes are very interesting. It requires about a month for all the males to assume the summer plumage. None were seen

in summer dress until April 18, 1886 (B. W. E.). The record from the first appearance of a change till the moult is completed is as follows: March 29 ('02), two Goldfinches, one singing and in great part in summer plumage; April 1 ('03), eight Goldfinches, four singing and with the back and part of the breast yellow, and part of head black; April 2, four Thistlebirds, one in perfect plumage, the others in changing phases of attire; April 12, two, one in full dress; April 14, five, two in yellow and black; April 19, three, two in winter plumage. One of these which was black; April 19, three, two in winter plumage. One of the last two which was taken was a male, the other one of the trio was in summer attire; April 25, twenty, ten in transitional stages of plumage; April 30, an increase in those of full plumage to the usual summer number. Probably all of the males have completed the moult.

112. [533] *Spinus pinus* (Wils.). Pine Siskin.

A rather regular migrant in moderate numbers; a rare winter resident. October 27 to May 13.

MIGRATION RECORD.

Year	1883.	1885.	1885.	1886.	1886.
Observer.....	B. W. E.	I. U. Coll.	C. H. B.	G. G. W.	G. G. W.
First seen	2-6	3-23	10-27	.....	.....
Next seen .....	.....	3-25*	.....	.....	.....
Common.....	.....	3-25*	.....	.....	12-4
Last seen .....	.....	5-13*	12-29	4-24	12-29*
Abundance	Not rare.	Common. *C. H. B.	Common.	.....	Not common *W. S. B.

Year.....	1887.	1896.	1902.	1903.
Observer	G. G. W.	A. W. B.	W. L. M.	W. L. M.
First seen .....	.....	.....	3-23	.....
Next seen .....	.....	.....	.....	.....
Common .....	.....	.....	.....	.....
Last seen	5-8	11-	5-*	3-18
Abundance .....	.....	.....	*E. Muhse.	.....

113. [534]
- Passerina nivalis*
- (Linn.). Snowflake.

Rare and irregular winter visitor (C. H. B., '86).

114. [536]
- Calcarius lapponicus*
- (Linn.). Lapland Longspur.

Rare and irregular winter visitor. Observed February 2, 1883 (W. S. B.); taken February 10 and 12, 1883 (B. W. E.); seven seen February 9, 1901 (V. H. B.). All were associated with *Otocoris a. praticola*.

115. [540]
- Poecetes gramineus*
- (Gmel.). Vesper Sparrow.*

Abundant summer resident. February 19 to October 25.

MIGRATION RECORD.

Year ...	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	W. S. B.	G. G. W.	A. B. U.	E. M. K.
First seen	4-1	.....	4-8	3-24	4-2	3-30
Next seen	4-2	.....	4-10 ^a	3-25 ^a	4-9 ^a	.....
Common	4-3	.....	.....	.....	4-17	.....
Last seen .....	.....	10-25	.....	.....	.....	.....
Abundance	Abundant.	Very common.	.....	Abundant.	Common.	Common.
			*G. G. W.	*B. W. E.	*E. M. K.	

Year	1899.	1900.	1901.	1902.	1902.	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	2-19	4-18	3-24	2-21	.....	3-17
Next seen	2-24	.....	.....	3-24	.....	3-18
Common	3-25	4-25	.....	3-29	.....	3-17
Last seen .....	.....	.....	.....	.....	10-19	.....
Abundance	Common.	Common.	Abundant.	Abundant.	Abundant.	Abundant.

116. [—]
- Passer domesticus*
- (Linn.). European House Sparrow.*

Exceedingly abundant resident. Appeared in Bloomington in 1875 (Butler).

Nest and six eggs taken as early as February 20, '03 (C. G. L.). Two males were observed trying to mate with a female Song Sparrow, March

2, 1901 (W. L. M.). During the mating season English Sparrows often engage in such earnest fighting that one or the other of the contestants is left dead upon the field. Their pugnacious encounters are by no means confined to that season, however. On October 16, 1902, two males were so deeply interested in their battle that they were both easily picked up in the hand.

Flycatchers are found in the Sparrow family and the House Sparrow is one of these. They have been observed catching insects on the wing, swooping and returning to the same perch like Flycatchers. Some seem more adept than others; one seen, made two darts in the air before returning to the tree which was his headquarters. Other Sparrows which have been observed at this pursuit are: Junco, Chewink, Chippy, Field and White-throated Sparrows.

Quite a tendency to albinism is noticeable in this bird and it seems to be of recent development. A perfect albino was taken September 28, 1885 (C. H. B.). In the single spring of 1903, a perfect albino was captured by hand while on a nest containing four young (McCracken); a partial albino with the head and flecks everywhere snowy white was taken and three similar ones seen. Many specimens with one or two rectrices or remiges white were observed. In two months in the summer at another locality, three partial albinos were seen and two complete ones reported. A peculiarity in the coloration is that the light color in the partial albinos is pure snowy white, while the entirely albinistic specimens are deep buffy white.

117. [542a] *Passerculus sandwichensis savanna* (Wils.). Savanna Sparrow.

Common migrant and probably rare summer resident. The majority of migration records do not show this bird in what is probably its true position. There are several rather early spring and late fall reports, but the greater number of dates given nearly coincide with those for the next species as if they were inseparably connected in time of migration as they have been, heretofore, generically united. This bird breeds farther north and winters farther north; the fact that it winters in the lower Wabash valley in our own State makes it seem probable that it should be seen earlier all over the State and that it has probably been overlooked during many seasons until its more conspicuous cousin, with the brighter colors and startling insect-like trill, arrived. It is true that the two birds are generally found together, but it is probable that the obscure

little Savanna Sparrow is present at a given point in the State from a week to a month in advance of the Yellow-winged Sparrow every year.

A nest identified as belonging to a bird of this species by Prof. J. R. Slonaker was found May 17, 1901. It was built in a depression in the ground and was lined and partly arched over with dry grass. On May 22, there were five eggs. June 3, they were hatched. June 7, the nest was empty but probably not as a result of the natural course of events.

In 1885 most of the individuals departed May 2. The Savanna Sparrow was taken March 29, 1894, by E. M. Kindle in Brown County.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1892.
Observer	C. H. B.	C. H. B.	G. G. W.	E. M. K.
First seen	4-18	10-17	4-10	3-30
Next seen	4-20	.....	4-16	.....
Common	4-22	.....	.....	.....
Last seen	5-11	11-6	4-27*	.....
Abundance	Very common	Not common	Not common	.....
			*B. W. E.	

Year	1901.	1902.	1902.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen .....	.....	3-23	.....	3-17.
Next seen .....	.....	3-24	.....	3-18
Common	5-10	4-3	.....	* 4-12
Last seen .....	.....	.....	9-1	.....
Abundance	Common.	Common.	Common.	Common.

118. [546] *Coturniculus savannarum passerinus* (Wils.) Grasshopper Sparrow.

Rather common summer resident (B. W. E.). April 12 to Oct. 4.

Song April 12, '03 (W. L. M.). A nest and well incubated eggs found June 6, 1902 (C. G. L.).

MIGRATION RECORD.

Year.....	1869.	1885.	1885.	1886.	1887.
Observer.....	I. U. Coll.	C. H. B.	S E. Meek.	B. W. E.	G. G. W.
First seen.....		4-20	.....	4-25	4-25
Next seen.....		4-23	.....	4-27	.....
Common.....		4-25	8-1	4-27	.....
Last seen.....	7-26	.....	10-4 ^s	.....	.....
Abundance.....		Common.	.....	Rather Common.	.....
			*C. H. B.		

Year.....	1899.	1901.	1902.	1903.
Observer.....	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	5-11	5-1	4-19	4-12
Next seen.....	5-13	5-5	4-25	4-19
Common.....	5-16	5-6	.....	4-12
Last seen.....	.....	.....	.....	.....
Abundance.....	Common.	Common.	Common.	Abundant.

119. [547] *Ammodramus henslowii* (Aud.). Henslow's Sparrow.

Rare summer resident. Mr. C. G. Littell saw a nest on the ground which contained four young almost ready to fly, June 3, 1902. Mr. Littell made this report in 1903, after he had become better acquainted with the bird at Winona Lake where it was collected. The accuracy of the record is thus assured.

120. [552] *Chondestes grammacus* (Say). Lark Sparrow.

Abundant summer resident. March 26 to August 26. In 1887 B. W. Evermann classed it as rare and said it had not been seen here until in recent years. However C. H. Bollman found it abundant in 1885. The Lark Sparrow has probably been increasing in numbers every year here.

Song April 12, 1903. Mating May 6, 1902. Nest and four young on ground under a cedar limb, May 30, 1903 (C. G. L.).

MIGRATION RECORD.

Year.....	1884.	1885.	1885.	1886.	1887.
Observer.....	C. H. E.	C. H. B.	C. H. B.	W. S. B.	G. G. W..
First seen	3-26	4-17	.....	4-21	4-26
Next seen .....	.....	4-18	.....	4-22 ^c	4-27
Common.....	.....	4-23	.....	.....	.....
Last seen .....	.....	.....	8-26	.....	.....
Abundance.....	.....	Abundant.	Abundant.	Rare.	.....
				*B. W. E.	

Year.....	1893.	1901.	1902.	1903.
Observer	E. M. K.	W. L. M.	W. L. M.	W. L. M..
First seen	4-17	5-6	4-24	4-12
Next seen	4-19	5-7	4-27	4-19
Common .....	.....	5-13	.....	4-19
Last seen.....	.....	.....	.....	.....
Abundance	Not common	Moderately common.	Common.	Abundant.

121. [554] *Zonotrichia leucophrys* (Forst.). White-crowned Sparrow.

Moderately common migrant. April 10 to May 16. October 4 to 25.

In 1885 most of them departed May 10 (C. H. B.).

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1893.
Observer.....	C. H. B.	C. H. B.	W. S. B.	G. G. W.	E. M. K.
First seen	5-1	10-4	4-13	4-30	4-19
Next seen.....	5-2	10-11	4-22 ^c	5-4	4-26
Common.....	5-4	.....	4-22†	.....	.....
Last seen	5-14	10-25	5-5½	5-8	.....
Abundance.....	Very common.	Not common	Common.	.....	.....
			*B. W. E. †B. W. E. ‡G. G. W.		

Year.....	1900.	1901.	1902.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-30	5-5	4-10	4-12
Next seen	5-5	5-6	4-20	4-28
Common		5-7		
Last seen		5-15	5-4	5-16
Abundance.....		Common.	Common.	Common.

122. [558] *Zonotrichia albicollis* (Gmel.). White-throated Sparrow.*

Abundant migrant. March 8, '03 (W. L. M.) to May 16. September 24 to November 22. Possibly rare winter resident. Reported January 29, 1903 (P. J. H.).

Song heard as early as March 9, 1903 and as late as November 8, 1902. On this late date the songs were loud, clear and distinct. "They remain with us in spring as late as they can. Often they are seen mating, and some years, when they lingered long, they have been observed carrying sticks, as though they had thought to begin nest-building. Some year when they remain late, I shall not be surprised to learn that the imperative demands of nature have impelled some of them to make their summer homes with us and build their nests" (A. W. Butler). "April 30, 1902, in a brush heap, in an old orchard, I found a White-throated Sparrow building a nest. The bottom of the nest was made of twigs, but every time she carried any material to the nest, a Catbird would fly down and take it away. The Catbird fought and chased the Sparrows until they left the nest unfinished" (Gertrude Hitze).

The bulk of the species departed May 10, 1885 (C. H. B.).

MIGRATION RECORD.

Year	1884.	1885.	1885.	1885.	1886.	1887.
Observer	C. H. E.	C. H. B.	C. H. B.	C. H. B.	B. W. E.	G. G. W.
First seen	3-18	♂3-16	♂4-8	9-24	4-12	4-11
Next seen		3-18	4-20	10-3	4-17*	
Common		4-25	4-25	10-10	4-22	
Last seen		5-14	5-15	11-8	5-6	
Abundance		Abundant.	Abundant.	Abundant.	Common	
					*G. G. W.	

Year	1892.	1900.	1901.	1902.	1902.	1903.	1903.
Observer.....	A. B. U.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen		4-17	.....	3-9	10-5	3-8	.....
Next seen .....			.....	3-14	10-12	3-9	.....
Common .....			.....	3-25	10-26	3-20	.....
Last seen.....	4-30	.....	5-13	5-4	11-9	5-16	11-22
Abundance.....			Common	Common	Common	Abundant.	Abundant.

123. [559] *Spizella monticola* (Gmel.). Tree Sparrow.*

Abundant winter resident. October 12 to April 19. The song is often heard in spring: March 1 and 5, 1902, and March 9 and 17, 1903.

MIGRATION RECORD.

Year	1885.	1885.	1901.	1902.	1902.	1903.
Observer	C. H. B.	C. H. B.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....		11-4	.....	.....	10-12	.....
Next seen.....		11-15	.....	.....	10-19	.....
Common	3-23	12-26	.....	.....	11-28	.....
Last seen	4-19	.....	3-17	3-26	.....	3-17
Abundance	Abundant.	Abundant.	Common.	Very Common.	Common.	Abundant.

124. [560] *Spizella socialis* (Wils.). Chipping Sparrow.* Fig. 18.

Abundant summer resident. March 16 to November 9.

Song March 17, 1903; March 26, 1902. Mating March 27, 1903. Nest found April 28, 1899 (N. B. M.); nest and four eggs May 2, 1903 (C. G. L.). Nearly full grown young seen with mother and being fed by her May 29, 1903. There is a nest in the collection of the University which is composed of soft vegetable fibers or rootlets without a trace of horsehair.

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1887.	1892.	1893.
Observer.....	C. H. E.	C. H. B.	C. H. B.	W. S. B.	G. G. W.	E. M. K.	E. M. K.
First seen	3-24	4-1	.....	3-19	4-1	3-27	3-20
Next seen .....	.....	4-2	.....	.....	.....	4-9	3-23
Common .....	.....	4-3	.....	5-24 ^s	.....	.....	.....
Last seen.....	.....	.....	11-7	.....	.....	.....	.....
Abundance.....	.....	Abund't.	Abund't.	Common	.....	Common	Common
				^s G. G. W.			

Year	1899.	1900.	1901.	1902.	1902.	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-12	4-8	3-25	3-16	.....	3-27
Next seen	4-15	4-12	3-27	3-23	.....	3-18
Common .....	.....	4-17	.....	3-26	.....	3-20
Last seen.....	.....	.....	.....	.....	11-9	.....
Abundance	Common.	Common.	Common.	Common.	Common.	Abundant.

125. [563] *Spizella pusilla* (Wils.). Field Sparrow.* Fig. 19.

Abundant summer resident. February 26 to November 8. Possibly rare winter resident. Reported January 17 and February 2, 1903 (P. J. H.).

Singing weakly February 26, 1902; in full song March 10, 1903. Mating March 29, 1902. Nest and 3 eggs, May 3, 1903 (C. G. L.). This nest was on the ground at the base of a large weed. Nest and full set of eggs May 14, 1899; hatched May 18 (N. B. M.).

A most abundant species in weedy fields.

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1887.	1893.
Observer	C. H. E.	C. H. B.	C. H. B.	B. W. E.	G. G. W.	E. M. K.
First seen	3-18	3-31	.....	3-15	3-24	3-30
Next seen .....	.....	4-1	.....	3-25	.....	.....
Common .....	.....	4-2	.....	3-26	.....	.....
Last seen .....	.....	.....	11-8	.....	.....	.....
Abundance .....	.....	Abundant.	Abundant.	Common.	.....	Common.

Year	1899.	1901.	1902.	1902.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen .....	.....	3-17	2-26	.....	3-1
Next seen .....	.....	3-24	3-14	.....	3-3
Common	4-15	3-24	3-21	.....	3-15
Last seen .....	.....	.....	.....	11-5	.....
Abundance	Common.	Common.	Common.	Common.	Abundant.

126. [567] *Junco hyemalis* (Linn.). Slate-colored Junco.*

Abundant winter resident. October 6 to May 1.

Snatches of song are often heard in March and April and it has been heard singing in the fall; November 9 and 23, 1902. On November 23, 1902, a bright, sunshiny day, one of three Juncos was observed carrying dry blades of grass in its beak. It always gave them up in favor of new ones every little while and did not put many of them in the same place. On this same day a Junco was also heard singing a quite loud and pleasing song. This occurrence should probably be classed with those phenomena which were discussed under the heading, "A Revival of Sexual Instinct" in "The Auk" a year or more ago. A similar thing has been noticed in the case of the English Sparrow. One was seen nest-building November 6, 1902.

Where there are weeds there are Juncos. But briary fence rows, and thicketed gullies are centers of density in the Junco population.

MIGRATION RECORD.

Year.....	1885.	1892.	1899.	1901.	1902.	1902.	1903.
Observer.....	C. H. B.	E. M. K.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen....	10-6	.....	.....	.....	.....	10-12	.....
Next seen....	10-7	.....	.....	.....	.....	10-14	.....
Common.....	10-20	.....	.....	.....	.....	10-19	.....
Last seen.....	.....	4-21	4-6	4-14	4-27	.....	5-1
Abundance...	Abundant.	.....	.....	Abundant.	Abundant.	Abundant.	Abundant.

127. [575a] *Peucaea aestivalis bachmanii* (Aud.). Bachman's Sparrow.

Common migrant and not uncommon summer resident. April 6, —.

"April 24, 1884, Prof. W. S. Blatchley took two Bachman's Sparrows from a brush-pile in Monroe County. That was its first record there. It appeared regularly thereafter between April 6 (1885) and April 29 (1886). In 1886 two sets of eggs and perhaps a half-dozen taken (Evermann)" [A W. Butler]. Song April 7, 1903. Common April 12, 1903; 31 of these birds were seen in a single high, brushy meadow. Here and in clearings where there are many oak saplings and in the uneven pastures where rosebushes and stunted cedars are plentiful, Bachman's Sparrow is most often found.

MIGRATION RECORD.

Year.....	1884.	1885.	1886.	1887.	1902.	1903.
Observer.....	W. S. B.	C. H. B.	C. H. B.	G. G. W.	W. L. M.	W. L. M.
First seen.....	4-24	4-6	4-29	4-27	4-19	4-7
Next seen.....	.....	4-26	5-8*	4-28	4-20	4-8
Common.....	.....	.....	.....	.....	.....	4-12
Last seen.....	.....	.....	.....	.....	.....	.....
Abundance.....	.....	Not rare.	Not rare.	.....	Rare.	Common.
			*G. G. W.			

128. [581] *Melospiza cinerea melodia* (Wils.). Song Sparrow.* Fig. 20.

Abundant during migration; common at other times but more so in winter than in summer. The Song Sparrow is not a common breeder here.

The most common songster, whose value is enhanced by his habit of singing when most other birds are silent. The writer has heard Song

Sparrows singing every month in the year. Following are dates when their song was heard in this locality, for ten months of the year: 9-28; 10-12; 11-8; 12-14, '02; 1-21; 2-22; 3-4; 4-4; 5-1; 6-9, '03. On April 8, 1900, one was observed singing during flight. Though not a performer of intricate music, nor ostentatious either in his lay or his pretty self, to the person to whom are familiar our country lanes as they appear in the cool, quiet duskiness of vernal evenings, this domestic songster is the most welcome and the most cheerful and cheering of singing birds.

May 3, 1903, nest and four young in a small, thick cedar in a sink-hole (C. G. L.). Many nests and eggs are found during the first week in June.

129. [583] *Melospiza lincolni* (Aud.). Lincoln's Sparrow.

Rare migrant; probably a more common and regular one, however than can be inferred from the data at hand.

MIGRATION RECORD.

Year.....	1885.	1885.
Observer.....	C. H. B.	C. H. B.
First seen.....	5-3	10-10
Next seen.....	5-5	10-11
Common.....		
Last seen.....		10-25
Abundance.....	Not common	Not common

130. [584] *Melospiza georgiana* (Lath.). Swamp Sparrow.

Common migrant. March 5 to April 29, October 2 to November 3. "Reported by B. W. Evermann in winter, not seen by me before March 19" (W. S. B.). There is a possibility that the Swamp Sparrow is an occasional summer resident. A nest in the University collection from this locality is identified as belonging to this bird.

In speaking of the breeding grounds, A. W. Butler says: "There it sings its song, but during the migrations it is songless." P. J. Hartman and the writer saw and heard the Swamp Sparrow singing during a steady drizzling rain March 8, 1903, the first date for the bird in that year.

MIGRATION RECORD.

Year.....	1885.	1886.	1887.	1895.
Observer	C. H. B.	W. S. B.	G. G. W.	Butler.
First seen	10-17	3-19	3-26	3-5
Next seen	10-28	.....	.....	.....
Common .....	.....	.....	.....	.....
Last seen	11-3	.....	.....	4-19
Abundance	Common.	.....	.....	.....

Year.....	1902.	1902.	1903.	1903.
Observer.....	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	3-26	10-12	3-8	.....
Next seen	3-27	.....	3-9	.....
Common .....	.....	.....	.....	.....
Last seen	4-24	10-26	4-29	10-2
Abundance	Common.	Common.	Common.	Common.

131. [585] *Passerella iliaca* (Merr.). Fox Sparrow.*

Common to abundant migrant. February 20 to May 16. October 5 to November 28. Rare winter resident. January 17, 1903. In winter they are very restricted in their range. Though seen several times from November 28, 1902, to March 8, 1903, none were seen outside of a portion of the valley of Griffey Creek about one fourth of a mile long. The exceedingly late date, May 16, 1903, is a record of six or seven Fox Sparrows seen by the Nature Study Class and the writer along a creek bottom in the extreme eastern part of the county.

"It is said to have a clear, loud, melodious voice, and to sing a sweet song, which I have never heard, but hope to some spring, as they should occasionally give us a foretaste of the musical treat that is wasted—humanly speaking—on the uninhabited Hudson Bay Region" (A. W. Butler). The song of the Fox Sparrow is indeed loud and melodious and is in tone similar to that of the Chewink. I have heard it singing every spring that I have made observations in this locality. P. J. Hartman and myself heard the song many times during the spring of 1903. They began singing March 9.

The bulk departed April 12, 1885 (C. H. B.).

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1892.	1895.
Observer	C. H. E.	C. H. B.	C. H. B.	B. W. E. G. G. W. W. S. B.	E. M. K. A. B. U.	A. W. B.
First seen	3-19	3-18	10-0	3-14	2-20	.....
Next seen		3-27	10-14	3-16	2-27	.....
Common		3-31	.....			.....
Last seen		4-19	11-3	3-25	3-30	4 20
Abundance		Common.	Rare.	Common.	Common.	.....

Year	1901.	1902.	1902.	1903.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	3-24	3-1			.....
Next seen		3-2			.....
Common		3-23	10-5	3-8	.....
Last seen		4-16	10-28	5-16	11-22
Abundance	Common.	Common.	Common.	Abundant.	Common.

132. [587] *Pipilo erythrophthalmus* (Linn.). Towhee.* Fig. 21.

Abundant migrant and summer resident; common winter resident. There is always a noticeable period in spring when Chewinks are very scarce. This is probably due to the departure of our winter residents before the arrival of migrants and summer residents. A marked example of this period of scarcity is found in the record for the spring of 1902. Up to the fifteenth of February, males and females were common and present in about equal numbers. From this date until the ninth of March, no Chewinks were seen. On the latter date, and for nearly a week thereafter, although males were present, no females were seen. But on the twenty-fourth of March both sexes were equally abundant and the season of song was at its height. Thus in this spring there was a period twenty-three days in length when they were absent; a period of a week when males only were present; and finally another period of fifteen days during which the arrival of other birds brought the numbers up to the usual summer abundance. This hiatus is more or less marked in every

year's record. That the males migrate first to the breeding ground is also upheld by all other available data.

MIGRATION RECORD.

Year.	Male.	Female.	Observer.
1885.....	3-14	4-1	C. H. B.
1886.....	2-22 ^a	3-9	W. S. B.
1902.....	3-9	3-16	W. L. M.
	^a B. W. E.		

The Chewink begins singing early. The first perfect song was heard March 1, 1903. On February 20, however, and again on March 1, two of these birds were found rehearsing in low tones. The first was scratching among some briars and was going over his spring song very softly. The notes were exactly the same; the only difference was in the volume and the tone which seemed to express contentment rather than ecstasy. The other one, heard on the first of March, was sitting in some cedar brush with his feathers ruffled up, his bill sunk in his breast, muttering his score. This whole effort was accomplished in rather a drowsy manner and he was so oblivious to his surroundings, that he was not frightened by the presence of a human being within three feet of him. Immediately after this, I heard another Chewink give the song perfectly from the top of a chestnut tree. It was a beautiful chant and seemed unusually attractive on this rainy March morning. The same habit of rehearsal has been observed in several other birds, among which are the Song Sparrow, White-throated Sparrow and Brown Thrasher.

Nest and three eggs found April 15, '03. Birds hatched on June 11, 1901, had flown June 19 (W. L. H.). A very late date is given by B. W. Evermann. "August 19, 1881, I found a Chewink's nest containing three fresh eggs, built at least three feet from the ground in a spice bush. Such is not common I believe." (Orn. and Oöl., 1881.)

133. [593] *Cardinalis cardinalis* (Linn.). Cardinal.* Fig. 22.

Abundant resident.

Mating February 18, 1901; March 23, 1903. Nestbuilding April 12, 1903, but, on the same date a nest was found which contained three eggs. This was afterwards ascertained to be the full set.

The Cardinal is another one of those cheery birds which may be heard singing at all times of the year. Some winter dates of singing are: 10-19; 11-9, '02 and 1-1; 2-8, '03. On February 13, 1903, I heard a Cardinal singing from the top of a cedar tree at 6 a. m., and on passing the same place at 7 a. m. found him still at his music.

134. [595] *Zamelodia ludoviciana* (Linn.). Rose-breasted Grosbeak.*

Common migrant. "But few breed here" (B. W. E.). Although the Rose-breasted Grosbeak has been reported a summer resident from localities farther south than this (St. Louis, Cincinnati), such an occurrence is very unusual. The only record of its making its summer home at Bloomington is that of B. W. Evermann in 1886. Song May 8, 1903.

The date, November 12, 1888, is from an uncatalogued specimen in the Museum of Indiana University which was collected by a Mr. Chambers. The males seem to arrive earlier and depart later than the females. Neither so common nor so early a migrant now as formerly.

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1886.	1887.
Observer.....	C. H. B.	C. H. B.	C. H. B.	B. W. E.	G. G. W.
First seen.....	♂4-23	♂4-30	9-11	4-23	4-28
Next seen.....	4-26	5-5	9-17	4-24*	.....
Common.....	5-6	5 6	9-18	5-4	.....
Last seen.....	6-16	5-15	10-10	5-4	.....
Abundance	Abundant.	Abundant.	Abundant.	Common.	.....
				*W. S. B.	

Year.....	1888.	1901.	1902.	1903.
Observer.....	Chambers.	W. L. M.	W. L. M.	W. L. M.
First seen .....	.....	5-7	5-5	5-7
Next seen .....	.....	.....	.....	5-8
Common.....	.....	.....	.....	.....
Last seen.	11-12	.....	.....	.....
Abundance.....	.....	Common.	Common.	Common.

135. [598] *Cyanospiza cyanea* (Linn.). Indigo Bunting.*

Abundant summer resident. April 13 to October 17; which are the limits of its stay in the State.

Song April 29, '03; also heard as late as August 9, in a latitude but little south of this. May 19, '03, nest and one egg found in a small bush along a road (C. G. L.). The males migrate from a few days to two weeks in advance of the females.

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1882.	1886.	1887.	1892.
Observer.....	C. H. B.	C. H. B.	C. H. B.	B. W. E.	C. H. B. W. S. B. G. G. W.	G. G. W.	E. M. K.
First seen ...	♂ 4-25	♂ 5-9	.....	4-13	4-22	4-27	5-4
Next seen....	5-2	5-10	.....	.....	4-23	4-30	.....
Common.....	5-16	5-16	.....	.....	4-24	.....	.....
Last seen ...	.....	.....	10-17	.....	.....	.....	.....
Abundance...	Abundant.	Abundant.	Abundant.	Abundant.	Abundant.	.....	.....

Year.....	1893.	1895.	1900.	1901.	1902.	1902.	1903.	1903.
Observer...	E. M. K.	A. W. B.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen..	5-6	5-2	4-28	5-6	.....	.....	4-28	.....
Next seen..	.....	.....	.....	5-7	.....	.....	4-29	.....
Common...	.....	.....	.....	5-14	5-4	.....	4-29	.....
Last seen ..	.....	.....	.....	.....	.....	9-1	.....	10-6
Abundance	.....	.....	Common	Common	Common	Common	Abundant	Abundant

136. [604] *Spiza americana* (Gmel.). Dickcissel.

Abundant summer resident. April 23 to October 2.

Song May 5, 1903. Nest and 5 eggs in a low bush, in an old orchard, May 15, 1901. Nest and four eggs about three feet up in a bush in a pasture, June 2, 1902 (C. G. L.).

Both sexes arrive at the same time, and they are either mated upon arrival or mate very soon afterwards.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	C. H. B. G. G. W.	G. G. W.	A. B. U.	E. M. K.
First seen	4-30	.....	4-23	5-2	5-7	4-28
Next seen	5-1	.....	4-29	.....	.....	5-4
Common	5-10	.....	5-1	.....	.....	.....
Last seen .....	.....	10-2	.....	.....	.....	.....
Abundance	Abundant.	Abundant.	Abundant.	.....	.....	.....

Year.....	1895.	1899.	1901.	1902.	1903.
Observer.....	A. W. B.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	5-4	5-11	.....	5-4	5-5
Next seen .....	.....	5-13	.....	.....	5-10
Common .....	.....	5-16	5-15	5-10	5-16
Last seen .....	.....	.....	.....	.....	.....
Abundance .....	.....	.....	Common.	Common.	Abundant.

137. [608] *Piranga erythromelas* Vieill. Scarlet Tanager.*

Common migrant. Moderately common summer resident (B. W. E., '87). April 22 to September 19. Song and mating April 29, 1903. Usually the males arrive before the females, sometimes as much as a week in advance. They arrive at the same time, however, in some years. B. W. Evermann says that this species was moderately common here in the spring of 1881. Six were seen on one morning in May. He says that this was the farthest north it had been reported in the State up to that time.

MIGRATION RECORD.

Year.....	1882.	1885.	1885.	1885.	1886.
Observer.....	B. W. E.	C. H. B.	C. H. B.	C. H. B.	B. W. E. G. G. W.
First seen	5-6	♂ 4-26	♂ 5-3	.....	4-22
Next seen .....	.....	4-28	5-9	.....	4-23
Common .....	.....	5-10	5-10	.....	4-24
Last seen .....	.....	.....	.....	9 19	.....
Abundance .....	.....	Abundant.	Abundant.	Abundant.	Common.

Year.....	1887.	1892.	1902.	1903.
Observer	G. G. W.	E. M. K.	W. L. M.	W. L. M.
First seen	4-28	5-4	4-23	4-28
Next seen	4-29	.....	4-27	4-29
Common .....	.....	.....	.....	4-29
Last seen .....	.....	.....	.....	.....
Abundance .....	.....	.....	Common.	Common.

138. [610] *Piranga rubra* (Linn.). Summer Tanager.*

Abundant migrant and common summer resident. April 1 to September 28.

Mated May 4, 1903; nest and five eggs in a small apple tree near a pond, May 19, 1902 (C. G. L.); nest and four eggs May 29, '01.

The date, April 1, 1886, is from an uncatalogued specimen in the museum of Indiana University, by W. A. Millis. The first migrant in 1901 was a male in variegated plumage. The males precede the females in migration.

MIGRATION RECORD.

Year	1885.	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	C. H. B.	C. H. B. B. W. E.	G. G. W.	A. B. U. E. M. K.	E. M. K.
First seen	4-22	4-26	.....	4-1*	4-27	5-1	5-1
Next seen	4-25	5-2	.....	4-18	.....	5-28	.....
Common	5-3	5-3	.....	5-4	.....	.....	.....
Last seen .....	.....	.....	5-28	.....	.....	.....	.....
Abundance.....	Abundant.	Abundant.	Abundant.	Common.	.....	.....	.....

*W. A. Millis.

Year..	1899.	1900.	1901.	1902.	1902.	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	5-9	4-29	5-6	4-27	.....	4-28
Next seen	5-11	5-5	5-7	5-4	.....	5 2
Common	5-16	5-9	5-13	4-27	.....	5-10
Last seen .....	.....	.....	.....	.....	9-1	.....
Abundance	Common.	Common.	Common.	Common.	Common.	Common.

In 1894 E. M. Kindle remarked upon the absence of this bird from Brown County while it was common in this, the adjoining county. During the last spring (1903) the Summer Redbird was common also in Brown County.

139. [611] *Progne subis* (Linn.). Purple Martin.*

Common summer resident. March 28 to September 10.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1892.	1893.	1895.
Observer	C. H. B.	C. H. B.	B. W. E. G. G. W.	G. G. W.	A. B. U. E. M. K.	E. M. K.	A. W. B.
First seen	3-31	.....	3-28	3-29	3-31	3-31	4-17
Next seen	4-1	.....	4-9	.....	4-2	.....	.....
Common	4-6	.....	.....	.....	4-19	.....	.....
Last seen .....	.....	9-10	.....	.....	.....	.....	.....
Abundance...	Abundant.	Abundant.	Common.	.....	Common.	Common.	.....

Year	1899.	1900.	1901.	1902.	1902.	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-12	4-7	4-16	4-5	.....	3-28
Next seen	4-13	4-8	4-17	4-6	.....	4-2
Common	4-20	4-10	4-18	4-15	.....	4-11
Last seen .....	.....	.....	.....	.....	9-1	.....
Abundance	Common.	Common.	Common.	Common.	Common.	Abundant.

There are only two large ponds in the region, and as the Swallows are seen at these places for a long time before they are in any other part of the country it is easy to record their migration.

One of the peculiarities of their migration is the arrival at the same time of all or several of the species. On one day we can find no Swallows at all; on the next, perhaps, all, from the Martin to the little Bank Swallows, will be present about our ponds. Four of the species came on the same day in 1885, and three on the same day in 1902 and 1903. After their arrival they are augmented in numbers at the same time, or they leave, or arrive again in full strength. Thus on four days in April, 1903—the 10th, 13th, 19th and 30th—large mixed flocks were observed, when all or nearly all of the species had been

absent the day before. Their departure was similar. On April 11, 17, 27 and May 1, the less vagrant summer resident *Progne* was the only Swallow remaining of the motley companies of the day before. In other years this mode of migration has been just as marked; in 1902, two species arrived together on the fifth of April and three on the thirteenth; and in 1885, four species, the Bank, Tree, Barn and Cliff Swallows arrived in one flock on the 15th of April, and were seen together again on the next day. Tree and Cliff Swallows became common on the 22d, the Barn Swallow a day before, and on the 25th the Bank and Roughwinged Swallows became common.

A more detailed discussion of the migration of the *Hirundinidæ* in 1903, will bring out another point, i. e., the relation of weather conditions to the phases of the migratory movement.

From April 10, the date when three species had arrived, to May 3, inclusive, when the last flock of migrants was seen, there were just fifteen cloudy or rainy days, with an average temperature of 47° at 5 a. m., and ten clear days with a temperature of 44°. Swallows, sometimes, with the exception of the Purple Martin, were absent [three specimens of *Hirundo* seen one day and two of *Petrochelidon* another] during the ten days, and were very much in evidence fifteen days. South winds prevailed during this period and migration was high among all the small land birds, especially on the 28th and 29th; but on these dates no flocks of swallows were seen. If a clear or partly clear period was succeeded by a rainy, cloudy, or misty one, swallows were surely to be found. As long as the weather remained cloudy, these birds remained, but on the first fair day they disappeared. The only species that arrived on a clear day was the Tree Swallow; but after its arrival its movements agreed with those of its cousins. There was only one cloudy day on which the crowds of swallows were absent and even that day brought an increase in the number of Martins.

A synopsis of the period follows: April 10, cloudy, 3 species; April 11, cloudy, an increase in number of Purple Martins; April 12, fair, no Swallows (Martin ignored); April 13-16, inclusive, cloudy and rainy, all species present; April 17-18, clear, no Swallows; 19-25, inclusive, cloudy or rainy, all species present in considerable numbers; 26-29, fair, few Swallows seen and their number decreased during this period; April 30, cloudy, a large flock of four kinds; May 1-2, clear, no Swallows; May 3, rainy, a

flock of eighty Bank Swallows and twelve Purple Martins. After this date only the usual summer numbers of the breeding species were seen; there were no more migrants. The Purple Martin which seemed to be less affected by weather conditions after arrival than the other species, was orthodox in its arrival which occurred on a cloudy morning after a clear night.

There is no other record so complete; and it can not be stated whether this relation between weather and migration is a fixed one, but in regard to the migratory movements of Swallows in 1903, it may be said that the relation was so close that one could predict the numbers to be found on any day from the condition of the weather.

140. [612] *Petrochelidon lunifrons* (Say). Cliff Swallow.

Abundant migrant and common summer resident. April 12 to September 14. Nest and four eggs in University collection (C. H. B.).

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1887.
Observer	A. W. B.	C. H. B.	C. H. B.	C. H. B.	G. G. W.
First seen	4-18	4-15	.....	4-19	4-12
Next seen .....	.....	4-16	.....	4-22	.....
Common .....	.....	4-22	.....	.....	.....
Last seen .....	.....	.....	9-14	.....	.....
Abundance .....	.....	Abundant.	Abundant.	Abundant.	.....

Year	1893.	1895.	1901.	1902.	1903.
Observer	E. M. K.	A. W. B.	W. L. M.	W. L. M.	W. L. M.
First seen	5-2	4-17	5-7	4-13	4-13
Next seen	5-6	.....	.....	.....	4-14
Common .....	.....	.....	.....	.....	4-14
Last seen .....	.....	.....	.....	.....	.....
Abundance .....	.....	.....	Common.	Common.	Common.

141. [613] *Hirundo erythrogastra* Bodd. Barn Swallow.*

Abundant migrant and summer resident. April 9 to September 12. May 12, 1903, nest about two-thirds completed on a rafter in a loft of a barn (C. G. L.).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.
Observer.....	C. H. B.	C. H. B.	G. G. W.	G. G. W.	A. B. U. E. M. K.
First seen	4-15	.....	4-10	4-12	4-18
Next seen.....	4-16	.....	4-17	.....	4-19
Common.....	4-21	.....	4-20	.....	4-24
Last seen.....	.....	9-12	.....	.....	.....
Abundance.....	Abundant.	Abundant.	Common.	.....	Common.

Year.....	18 3.	1899.	1902.	1903.
Observer	E. M. K.	N. B. M.	W. L. M.	W. L. M.
First seen	4-9	4-22	4-13	4-10
Next seen	4-10	.....	4-19	4-13
Common .....	.....	.....	.....	4-13
Last seen.....	.....	.....	.....	.....
Abundance	Common.	Common.	Common.	Abundant.

142. [614] *Iridoprocne bicolor* (Vieill.). Tree Swallow.

Abundant migrant. April 5 to 30. A common summer resident in 1886 (C. H. B.).

MIGRATION RECORD.

Year.....	1885.	1902.	1903.
Observer	C. H. B.	W. L. M.	W. L. M.
First seen	4-15	4-5	4-5
Next seen	4-16	4-19	4-10
Common	4-22	.....	4-5
Last seen .....	.....	.....	4-30
Abundance	Very common.	Common.	Abundant.

143. [616] *Riparia riparia* (Linn.). Bank Swallow.*

Abundant migrant and common summer resident. April 6. Young learning to fly, June 4, 1902 (C. G. L.).

MIGRATION RECORD.

Year	1884.	1885.	1900.	1902.	1903.
Observer.....	A. W. B.	C. H. B.	N. B. M.	W. L. M.	W. L. M.
First seen	4-6	4-15	4-17	4-13	4-13
Next seen		4-16	4-20		4-14
Common		4-25	4-20		4-22
Last seen					
Abundance		Common.	Common.	Common.	Abundant.

144. [617] *Stelgidopteryx serripennis* (Aud.). Rough-winged Swallow.

Common migrant and rather common summer resident. April 13. B. W. Evermann found them abundant and mating at Gosport, May 8, 1886. Many nests were nearly complete.

MIGRATION RECORD.

Year.....	1885.	1886.	1903.
Observer	C. H. B.	B. W. E. W. S. B.	W. L. M.
First seen	4-18	5-1	4-13
Next seen	4-22	5-8	4-14
Common	4-25	5-8	4-22
Last seen			
Abundance	Common.	Rare.	Common.

145. [619] *Ampelis cedrorum* (Vieill.). Cedar Waxwing.

Common summer resident; irregular at other seasons of the year, sometimes entirely absent for considerable periods, and again appearing in large numbers for a longer or shorter time.

Nest and two eggs about six feet up in an isolated cedar, June 13, 1902 (C. G. L.).

146. [621] *Lanius borealis* Vieill. Northern Shrike.

Although stated to be a rare winter visitor by C. H. Bollman in 1886, there are no actual records for this region except those of February 8, and 23, 1902. It was observed in Brown County, November 18, 1894 (E. M. K.).

147. [622e] *Lanius ludovicianus migrans* (W. Palmer.). Migrant Shrike.*

Uncommon summer resident. March 3 to December 1. Rare in winter (W. S. B.). February 16, 1901 (V. H. B.).

Mating and attempts at song, March 15, 1903. The song resembles some of the more harsh calls of the Blue Jay. May 10, 1903, nest and five young just hatched, ten feet up in a hedge (C. G. L.).

MIGRATION RECORD.

Year.....	1885.	1886.	1892.	1893.	1901.
Observer.....	C. H. B.	W. S. B.	A. B. U.	E. M. K.	W. L. M.
First seen	4-1	3-28	3-25	3-15	3-3
Next seen	4-17	.....	.....	.....	3-17
Common.....	.....	.....	.....	.....	.....
Last seen.....	.....	.....	.....	.....	.....
Abundance.....	Rare.	Rare.	.....	Rare.	Common.

Year.....	1902.	1902.	1903.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	3-23	.....	3-11	.....
Next seen .....	.....	.....	3-15	.....
Common .....	.....	.....	.....	.....
Last seen.....	.....	11-30	.....	12-1
Abundance	Common.	Common.	Common.	Common.

148. [624] *Vireo olivaceus* (Linn.). Red-eyed Vireo.* Fig. 23.

Abundant migrant and summer resident. April 19 to October 2.

Song April 28, 1903; mating April 29. Nest with three eggs of the owner and one of a Cowbird, May 25, '03. This nest was about four feet high, attached to a limb of a small cedar bush and thickly surrounded by blackberry vines.

This far from shy bird with its persistent song is found absolutely everywhere in the height of its migration. It sings as long as it is here; one was heard singing September 20, 1903.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	B. W. E. C. H. B.	G. G. W.	E. M. K.	E. M. K.
First seen	4-21	.....	4-23	4-27	4-27	5-1
Next seen	4-22	.....	4-24	.....	.....	.....
Common	4-25	.....	.....	.....	.....	.....
Last seen .....	.....	10-2	.....	.....	.....	.....
Abundance	Abundant.	Abundant.	Abundant.	.....	Common.	Common.

Year	1899.	1900.	1902.	1902.	1903	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-26	5-2	4-23	.....	4-19	.....
Next seen	4-29	5-7	4-25	.....	4-27	.....
Common	4-29	5-8	4-27	.....	4-29	.....
Last seen .....	.....	.....	.....	9-28	.....	9-20
Abundance	Common.	Common.	Common.	Common.	Abundant.	Abundant.

149. [626] *Vireo philadelphicus* (Cass.). Philadelphia Vireo.

Rare migrant. April 28th to September 28th. The dates are earlier and later respectively than the hitherto recorded extremes of the Philadelphia Vireo's stay in Indiana. Rare summer resident (B. W. E., '87).

MIGRATION RECORD.

Year	1885.	1885.	1901.
Observer	C. H. B.	C. H. B.	W. L. M.
First seen	4-30	.....	4-28
Next seen	5-4	.....	.....
Common .....	.....	.....	.....
Last seen .....	.....	9-28	.....
Abundance	Rare.	Rare.	Rare.

150. [627] *Vireo gilvus* (Vieill.). Warbling Vireo.*

Common summer resident. April 21 to October 10. Song April 28, 1903.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1903.
Observer	C. H. B.	C. H. B.	C. H. B. B. W. E.	G. G. W.	A. B. U.	W. L. M.
First seen	4-21	.....	4-25	4-28	5-7	4-28
Next seen	4-22	.....	4-27	.....	.....	4-29
Common	4-28	.....	.....	.....	.....	4-28
Last seen .....	.....	10-10	.....	.....	.....	.....
Abundance	Abundant.	.....	Common.	.....	.....	Common.

151. [628] *Vireo flavifrons* Vieill. Yellow-throated Vireo.*

Common migrant. April 16 to May 13; September 1 to October 19; the extreme dates are the limits of its residence in the State. Perhaps rare summer resident; its nest was found in Brown County, May 16, 1897 (V. H. B.). Song April 29, 1903. In the fall of 1902 Yellow-throated Vireos were found wherever there was undergrowth.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1896.
Observer	C. H. B.	C. H. B.	B. W. E. C. H. B.	G. G. W.	A. W. B.
First seen	4-20	9-12	4-16	4-25	4-20
Next seen	4-22	9-15	4-17	.....	.....
Common .....	.....	.....	.....	.....	.....
Last seen	5-13	9-28	.....	.....	.....
Abundance	Common.	Common.	.....	.....	.....

Year	1901.	1902.	1902.	1903.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	5-6	4-25	9-1	4-24	.....
Next seen .....	.....	4-27	10-5	4-28	.....
Common .....	.....	.....	10-19	.....	.....
Last seen .....	.....	.....	10-19	.....	9-29
Abundance .....	.....	Common.	Common.	Common.	Common.

152. [629] *Vireo solitarius* (Wils.). Blue-headed Vireo.

Rather uncommon migrant. April 28 to May 17. September 16 to 28.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1892.	1895.	1903.
Observer	C. H. B.	C. H. B.	G. G. W.	E. M. K.	A. B. U.	W. L. M.
First seen	4-28	9-16	5-1	5-9	4-28	4-29
Next seen	4-30	9-18				5-13
Common						
Last seen	5-17	9-28				5-13
Abundance	Common.	Rare.				Rare.

153. [631] *Vireo noveboracensis* (Gmel.). White-eyed Vireo. Fig. 24.

Abundant summer resident. April 17 to September 20.

Song April 28, 1903, to September 20, 1903. May 5, 1903, a nest was nearly completed. It was found along a narrow, little-frequented road, and was attached on one side to a cedar limb, and to a blackberry vine on the other. It was about four feet high. On April 11, this nest contained two Cowbird's eggs and one of the Vireo (C. G. L.).

Abundant and vociferous in the spring migration. Every thicket is filled with the jargon of its song.

The date of April 17, 1903, is given on the authority of a Nature Study Class.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.
Observer	C. H. B.	C. H. B.	C. H. B. B. W. E. G. G. W.	G. G. W.	A. B. U.
First seen	4-21		4-25	4-25	5-7
Next seen	4-22		4-28	4-26	
Common	4-25		5-8	4-30	
Last seen		9-2			
Abundance	Common.	Common.	Common.	Common.	

Year	1893.	1899.	1900.	1903.	1903.
Observer.....	E. M. K.	N. B. M.	N. B. M.	W. L. M.	W. L. M.
First seen	4-30	5-1	4-21	4-17*	.....
Next seen	5-6	5-4	.....	4-24	.....
Common.....	.....	.....	.....	4-29	.....
Last seen .....	.....	.....	.....	.....	9-20
Abundance .....	.....	.....	.....	Abundant.	Abundant.

*See above.

154. [636] *Mniotilta varia* (Linn.). Black and White Warbler.*

Common migrant and rare summer resident. Considered a common summer resident in 1886 by C. H. Bollmann. April 7 to October 4. Song April 28, 1903.

In spring you will find this striped vision only on the trunks of the larger forest trees. Although you are searching for him and feel sure of his presence, the actual discovery is always a surprise. This little flake of sharply contrasted colors makes its appearance so quickly that we find it difficult to realize that it is not a piece of bark suddenly possessed of life, but our own dear little Black and White Creeper that is before us. In Autumn he is more democratic and is often found in lowly thickets. Is it not because we are sated with discovery, that the thrill of last spring is not felt when this leader of the band of wood warblers is espied? Is it not because we have met the timid glance of the rare Cape May, or the gaudy Magnolia through the interlacing branches, or that here the Redstart spins his glowing pin-wheel, that the Black and White Warbler is not again hailed as a distinguished visitor when we see him in September clinging to the slender stem of the hazel, inspecting its surface or gracefully reaching out for the slow-descending caterpillar?

Yes, we think the reason lies with the observer and not with the observed; for we are surely not at our best when we slight our tiny friend ever so little in the greeting. He remains always the most attractive, the most dear of his woodsy clan.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1893.
Observer.....	C. H. B.	C. H. B.	G. G. W. C. H. B.	G. G. W.	E. M. K.
First seen.....	4-17	.....	4-17	4-20	4-7
Next seen	4-18	.....	4-18	4-27	.....
Common	4-24	.....	.....	.....	.....
Last seen.....	.....	9-28	.....	.....	.....
Abundance	Common.	Common.	Common.	.....	.....

Year	1901.	1902.	1902.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	5-4	4-27	9-1	4-24
Next seen .....	.....	.....	9-7	4-28
Common .....	.....	.....	.....	4-28
Last seen .....	.....	.....	10-4	.....
Abundance .....	.....	Common.	Common.	Common.

155. [637] *Protonotaria citrea* (Bodd.). Prothonotary Warbler.

Rare migrant. "Mr. Chauncey Juday reports it from Monroe County, where a specimen was taken at Harrodsburg, April 26, 1895" (A. W. Butler). E. M. Kindle reported it May 28, 1892. As nests and eggs of this species have been taken in other parts of the State at an earlier date than this, it is possible that the Prothonotary Warbler may be found here as a rare summer resident.

156. [639] *Helmitheros vermivorus* (Gmel.). Worm-eating Warbler.

Common migrant and "rather common summer resident" (B. W. E.). April 20 to August 31. Song May 4, 1902. "Prof. W. S. Blatchley took a nest and six fresh eggs, and one of the Cowbird, near Bloomington, May 12, 1886. The nest was at the base of a clump of ferns, and was composed of the leaves of 'Maiden Hair' fern. The next day Prof. B. W. Evermann took a nest from a similar location, containing five of the owner's eggs and two of the Cowbird" (A. W. Butler).

Common in the fall of 1903 in the undergrowth along creeks.

MIGRATION RECORD.

Year.	1885.	1885.	1886.	1902.	1903.
Observer.....	C. H. B.	C. H. B.	W. S. B. B. W. E.	W. L. M.	W. L. M.
First seen.....	4-20	.....	5-1	4-27	4-28
Next seen.....	4-21	.....	5-4	5-4	.....
Common.....	.....	.....	.....	.....	4-28
Last seen.....	.....	8-31	.....	.....	.....
Abundance	Common.	Common.	Rare.	Common.	Common.

157. [641] *Helminthophila pinus* (Linn.). Blue-winged Warbler.*

Abundant migrant. Rare summer resident (C. H. B.—B. W. E.).
April 19 to September 28. Song April 19, 1903.

Orchards and open woods are the favorite haunts of the Blue-winged Yellow Warbler.

On a bright day after a rainy morning in April, 1903, warblers of this species were observed to move from one part of the country to another about three miles away in from six to eight hours. In the morning they were plentiful in the orchard and clearings south of the city, while none were to be observed anywhere north of town. In the afternoon these conditions were reversed, they were common and singing in the orchards north of town, while they were entirely absent in the places where they had been seen in the morning. Their movements even for the shortest distances were always in the same direction, they flew from limb to limb, from tree to tree, in the same general trend, toward the north.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1902.	1902.	1903.
Observer.....	C. H. B.	C. H. B.	B. W. E.	G. G. W.	W. L. M.	W. L. M.	W. L. M.
First seen	4-20	.....	4-27	4-28	4-23	.....	4-19
Next seen	4-28	.....	.....	4-29	.....	.....	4-28
Common.....	.....	.....	.....	.....	.....	.....	4-19
Last seen.....	.....	8-31	.....	.....	.....	9-28	.....
Abundance...	Rare.	Rare.	Common.	.....	Common.	Common.	Abundant.

158. [642] *Helminthophila chrysoptera* (Linn.). Golden-winged Warbler.

Very rare migrant. April 27, 1887 (G. G. W.); 28, 1901; May 4, 1886 (G. G. W.).

159. [645] *Helminthophila rubricapilla* (Wils.). Nashville Warbler.*

"Common in spring, abundant in fall" (C. H. B., 1886). "In Monroe County it was rather common, April 27 to May 1, 1886 (Evermann, Blatchley)" [A. W. Butler]. During the last few years the Nashville Warbler has been a more rare bird than the above quotations indicate. One or two records in a migration has been as much as could be hoped for concerning this species. April 24 to May 11. August 26 to October 10.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1899.
Observer	C. H. B.	C. H. B.	B. W. E. W. S. B.	N. B. M.
First seen	4-25	8-26	4-27	5-5
Next seen	4-26	9-22	.....	.....
Common .....	.....	.....	.....	.....
Last seen	5-11	10-10	5-1	.....
Abundance	Common.	Abundant.	Common.	.....

Year.....	1901.	1902.	1903.	1903.
Observer	C. H. E.	W. L. M.	W. L. M.	W. L. M.
First seen	4-29	4-24	4-29	.....
Next seen .....	.....	.....	.....	.....
Common .....	.....	.....	.....	.....
Last seen .....	.....	.....	.....	10-2
Abundance	Rare.	Rare.	Rare.	Rare.

160. [646] *Helminthophila celata* (Say). Orange-crowned Warbler.

Very rare migrant. One record; May 4, 1885 (C. H. B.).

161. [647] *Helminthophila peregrina* (Wils.). Tennessee Warbler.*

"Not common in spring, abundant in fall" (C. H. B., 1886). April 26 to May 16. August 30 to October 17. "At Bloomington, both Profs. Blatchley and Evermann thought it less numerous than the Nashville Warbler" (A. W. Butler). Decidedly the reverse is the case now. One

may observe in spring a hundred of the present species to one of the Nashville Warbler, and in fall a thousand. The Tennessee Warblers, in the latter season, literally fill all the trees, whether the neatly-trimmed maples along the city streets or the magnificent oaks of the forest. The underbrush is alive with them, they are in the weeds, in briars, and in the stubble. Swamp and hilltop, cultivated field and forest, alike, are animated by the hordes of Tennessee Warblers. They are everywhere.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1890.	1900.	1903.	1903.
Observer.....	C. H. B.	C. H. B.	C. H. B.	A. W. B.	N. B. M.	W. L. M.	W. L. M.
First seen	4-26	4-30	4-27	.....	.....	.....	.....
Next seen	4-30	9-4	.....	.....	.....	.....	.....
Common.....	.....	9-11	.....	5-3	.....	.....	.....
Last seen.....	5-14	10-7	.....	5-10	5-12	5-16	10-2
Abundance.....	Rare.	Abundant.	Rare.	Common	.....	Rare.	Abundant.

162. [648a] *Compothlypis americana usneæ* Brewster. Northern Parula Warbler.

Rare migrant.

In accordance with A. W. Butler's precedent, birds from Monroe County are referred to this subspecies.

MIGRATION RECORD.

Year.	1885.	1886.
Observer	C. H. B.	G. G. W. W. S. B.
First seen	4-21	4-24
Next seen .....	.....	4-27
Common .....	.....	.....
Last seen.....	.....	.....
Abundance	Rare.	Rare.

163. [650] *Dendroica tigrina* (Gmel.). Cape May Warbler.

Rather rare migrant. April 22 to May 11. September 27 to October 7.

In the fall of 1903, the writer observed this species and the Tennes-

see Warbler puncturing grapes. They thrust their bills into the grapes and after poking around inside a little lifted their heads and acted as if drinking. After being punctured, the grapes, of course, shrivelled and became worthless. Scarcely a grape, and not a cluster were missed in the arbor under observation. The damage, however, was not great, as the birds did not begin their depredations until after the owners had harvested as much of the crop as they desired.

The males arrive and depart earlier than the females.

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1886	1899.	1903.
Observer	C. H. B.	C. H. B.	C. H. B.	C. H. B. G. G. W.	N. B. M.	W. L. M.
First seen	♂4-22	♂4-24	9-27	4-24	.....	.....
Next seen	4-23	4-30	.....	5-1	.....	.....
Common .....	.....	.....	.....	5-5	.....	.....
Last seen	5-8	5-11	10-7	5-5	5-8	9-29
Abundance	Rare.	Rare.	Rare.	Rare.	.....	Rare.

164. [652] *Dendroica aestiva* (Gmel.). Yellow Warbler.*

Abundant summer resident. April 12 to August 24.

Song April 26, 1903; mating April 27. Nest and eggs May 4, 1902. May 30, 1903. Nest with four, well-incubated eggs, in the top fork of a small plum tree about 20 feet from the ground (C. G. L.).

Very common in orchards; a persistent songster.

The earliest record for the State is April 4, 1894 (E. M. K.), from Brown County.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1892.
Observer	C. H. B.	C. H. B.	B. W. E. C. H. B. G. G. W.	G. G. W.	A. B. U.
First seen	4-21	.....	4-22	4-25	4-30
Next seen	4-22	.....	4-23	.....	.....
Common	4-24	.....	5-1	.....	.....
Last seen .....	.....	8-24	.....	.....	.....
Abundance	Abundant	Abundant.	Rare.	.....	.....

Year	1893.	1899.	1901.	1902.	1903.
Observer	E. M. K.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-26	4-29	5-6	4-19	4-12
Next seen				4-23	4-24
Common	4-26	4-29		4-27	4-27
Last seen					
Abundance	Common.	Common.		Common.	Abundant.

165. [654] *Dendroica caerulescens* (Gmel.). Black-throated Blue Warbler.

Rather uncommon migrant. April 30 to May 13. September 1 to October 4.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1902.	1903.
Observer	C. H. B.	C. H. B.	G. G. W.	G. G. W.	W. L. M.	W. L. M.
First seen	4-30	9-18	5-7	5-2	9-1	4-30
Next seen	5-3				9-28	
Common						
Last seen	5-13				10-4	5-12
Abundance	Common.	Rare.			Rare.	Rare.

166. [655] *Dendroica coronata* (Linn.). Myrtle Warbler.*

Common migrant and not rare winter resident. September 24 to May 13. First in full plumage March 25, 1903. In winter this species seems to prefer certain restricted localities; most of the individuals that have been seen here in winter have been found in a dense pine and cedar grove, but in the winter of 1902-1903, some were seen at two other places—an open forest near a pond and an old orchard.

Recorded as wintering in 1882-3; 1884-5; 1885-6; 1886-7; 1891-2; 1892-3; 1899-1900; 1900-01; 1902-3.

The record of the appearance of individuals in different stages of plumage for a year is as follows: those seen at intervals through January, February and part of March were in the usual winter dress. On the tenth of March (1903) the first change was noted. A single Yellowrump

was found in some bushes along a street in town. The side-spots were large and brilliant as was also the rump. The back had the sharply defined black and gray streaking, but the head and breast were as in winter. March 21, a specimen in winter plumage was seen; March 23, two individuals, one in full plumage with the exception of the crown-spot which was somewhat obscured by dark tips to the feathers, the other in the usual autumnal and winter garb. March 25, four Myrtle Warblers were seen, and of these, one had the winter plumage, two had yellow crown and rump but no side-spots, and one was brilliant in a new and complete spring suit. March 27, one with winter colors; March 30, one in complete and one in winter plumage; April 1, two like the last. April 3, three specimens with all the spots showing but only dimly on the sides and crown. After April 3 all mentioned are in full plumage unless otherwise stated. April 5, two, one in winter dress; April 8, four, one in winter plumage; April 11, four; April 12, twelve; April 14, three, two of which were clothed as in winter; April 15, four; April 19, six, one looking just as he did in January, and he was the last one observed in this plumage, although of twenty-one seen on April 28, two were still in transition stages of plumage. Thus fifty days elapsed between the first and last observed changes in plumage, and, half as many days passed between the appearance of summer dress and the vanishing of winter garb.

In the fall the first yellowrumps were seen on October 12 (1902). Of thirty individuals, one had the sides yellow, while all of the others had already assumed the sombre shades of winter plumage. October 26, fourteen of these birds were observed and one was still in nearly perfect summer condition, the crown and sides being only slightly dusted with darker. All others seen during the remainder of the year were in ordinary winter plumage. From these observations it may be seen that, although about eight months are consumed in the change from winter, through summer, back to winter plumage again, by the species as a whole, yet it is possible that some individuals may complete this cycle of changes in six months.

On December 14, 1902, a Myrtle Warbler was seen flying in somewhat wide sweeps, like a flycatcher, but, hovering, he gleaned from the trees, fences and the ground, and not from the air.

MIGRATION RECORD.

Year.....	1883.	1884.	1885.	1885.	1885.	1887.
Observer	B. W. E.	C. H. E.	C. H. B.	C. H. B.	C. H. B.	G. G. W. B. W. E.
First seen.....	2-10	3-21	♂1-31	♂4-25	9-24	2-
Next seen.....			4-17	4-30	9-25	.....
Common			5-2	5-8	10-7	.....
Last seen.....			5-11	5-13	.....	5-4
Abundance	Common.	.....	Abundant.	Abundant.	Abundant.	Common.

Year.....	1892.	1900.	1901.	1902.	1902.	1903.
Observer	A. B. U.	N. B. M.	W. L. M. C. H. E.	W. L. M.	W. L. M.	W. L. M.
First seen.....	2-19	.....	.....	3-23	10-12	.....
Next seen.....	2-31	.....	.....	3-38	10-26	.....
Common .....	.....	.....	4-29	.....	10-12	4-12
Last seen.....	.....	4-29	5-1	4-27	.....	5-3
Abundance	Common.	.....	Common.	Common.	Common.	Common.

167. [657] *Dendroica maculosa* (Gmel.). Magnolia Warbler.*

Rather common migrant. May 5 to 24. August 31 to October 4. In woods with undergrowth, you will find this warbler spying upon you from the lower limbs of the maples and beeches, or peeping through the network of leaves and branches of the thickets. He always has the attitude of peering. His black spectacles set off with white dots only enhance this expression.

Females were not seen until May 8, 1885.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1889.	1902.
Observer	C. H. B.	C. H. B.	G. G. W.	G. G. W.	N. B. M.	W. L. M.
First seen.....	5-5	8-31	5-8	5-5	5-10	9-1
Next seen.....	5-8	9-6	5-14	.....	.....	9-7
Common .....	.....	9-12	.....	.....	.....	9-28
Last seen	5-24	9-19	5-14	.....	.....	10-4
Abundance	Common.	Common.	.....	.....	Rare.	Common.

168. [658] *Dendroica cerulea* (Wils.). Cerulean Warbler.

Common migrant; not common summer resident (G. G. W.—N. B. M.).
The males precede the females in migration.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.
Observer	C. H. B.	C. H. B.	W. S. B. C. H. B.	G. G. W.
First seen	♂ 4-28	♂ 5-9	4-23	4-27
Next seen	5-4	5-10	4-24	4-28
Common				
Last seen				
Abundance.....	Common.	Common.	Common.	Common.

Year.....	1892.	1900.	1901.	1903.
Observer	A. B. U.	N. B. M.	W. L. M.	W. L. M.
First seen	4-30	5-5	5-4	4-28
Next seen	5-7			
Common				
Last seen				
Abundance.....		Common.	Common.	Common.

169. [659] *Dendroica pensylvanica* (Linn.). Chestnut-sided Warbler.

Rather common migrant. April 21 to May 10. August 28 to September 15.

The first migrants are males.

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1886.	1892.	1901.	1902.	1903.
Observer.....	C. H. B.	C. H. B.	C. H. B.	G. G. W. B. W. E.	A. B. U.	C. H. E.	W. L. M.	W. L. M.
First seen.....	♂ 4-21	♂ 4-28	8-28	5-4	5-7	4-29	5-5	5-7
Next seen	4-28	4-30	8-29	5-8				
Common			8-31					
Last seen	5-10		9-15					
Abundance.....	Common	Common	Common	Common				Rare.

170. [660] *Dendroica castanea* (Wils.). Bay-breasted Warbler.

Rather rare migrant. April 29 to May 13. September 18 to October 10. The limiting dates each extend the recorded period of its stay in Indiana one day.

MIGRATION RECORD.

Year.....	1885.	1886.	1903.	1903.
Observer.....	C. H. B.	B. W. E. G. G. W.	W. L. M.	W. L. M.
First seen	9-18	5-4	4-29	.....
Next seen	9-19	5-6	.....	.....
Common	10-3	.....	.....	.....
Last seen.....	10-10	5-8	5-13	10-3
Abundance.....	Abundant.	Rare.	Rare.	Rare.

171. [661] *Dendroica striata* (Forst.). Black-poll Warbler.

Rather rare migrant. April 28 to May 19. September 18 to October 26.

The last date for the species in 1885, May 19, was the date of arrival of the females. October 26, is the latest record for this State. The last one taken in 1903 was a female.

MIGRATION RECORD.

Year.....	1885.	1885.	1902.	1903.
Observer	C. H. B.	C. H. B.	W. L. M.	W. L. M.
First seen	4-28	9-18	.....	.....
Next seen	5-13	9-19	.....	.....
Common .....	.....	9-25	.....	.....
Last seen.....	5-19	10-12	10-26	5-13
Abundance	Rare.	Abundant.	Rare.	Rare.

172. [662] *Dendroica blackburniae* (Gmel.). Blackburnian Warbler.

Rather rare migrant. April 21 to May 14. August 27 to October 10.

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1886.
Observer	C. H. B.	C. H. B.	C. H. B.	B. W. E.
First seen	♂4-21	♂5-13	8-27	4-27
Next seen	5-2	5-14	8-30	.....
Common				
Last seen.....	5-14	5-14	10-10	.....
Abundance	Common.	Common.	Rare.	Rare.

Year.....	1892.	1901.	1902.	1903.
Observer	A. B. U.	W. L. M.	W. L. M.	W. L. M.
First seen	5-7	5-7	9-1	4-28
Next seen				
Common				
Last seen.....				
Abundance		Rare.	Rare.	Rare.

173. [663a] *Dendroica dominica albiflora* Ridgw. Sycamore Warbler.*

Common migrant; not uncommon summer resident (B. W. E., '87).
April 12 to October 9.

Song and mating April 12, 1903.

On September 18, 1902, it seemed that every shade tree in town contained five or six of these birds; sometimes they descended and fed for a short time in the lawns. Some were also seen feeding upon ragweeds.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1892.	1893.
Observer.....	C. H. B.	C. H. B.	B. W. E. A. W. B.	E. W. K.	E. W. K.
First seen	4-21	.....	4-14	4-21	4-16
Next seen	4-24	.....	4-16	.....	.....
Common.....	.....	.....	4-27	.....	.....
Last seen	5-16	9-27	.....	.....	.....
Abundance.....	Common.	Rare.	.....	.....	.....

Year.....	1901.	1902.	1902.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	5-5	4-23	.....	4-12
Next seen .....	.....	4-27	.....	4-19
Common .....	.....	4-23	9-28	4-28
Last seen.....	.....	.....	10-9	.....
Abundance.....	Common.	Common.	Common.	Common.

174. [667] *Dendroica virens* (Gmel.). Black-throated Green Warbler.*

Abundant migrant. April 18 to May 16. September 1 to October 17. These dates indicate a longer stay in this county than has heretofore been recorded for the State.

In spring this species is nearly confined to the woods, in fall it is found everywhere.

The males arrive and depart earlier than the females.

MIGRATION RECORD.

Year	1885.	1885.	1885.	1886.	1887.	1892.
Observer	C. H. B.	C. H. B.	C. H. B.	G. G. W. C. H. B. B. W. E.	G. G. W.	E. M. K.
First seen.....	♂4-20	♂5-5	9-11	4-18	4-25	.....
Next seen.....	4-21	5-9	9-12	4-22	4-28	.....
Common	5-9	5-9	9-18	4-23	.....	.....
Last seen.....	5-13	5-14	10-17	5-4	5-7	5 7
Abundance.....	Abundant.	Abundant.	Abundant.	Common.	.....	.....

Year.....	1901.	1902.	1902.	1903.	1903.
Observer.....	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	.....	.....	9-1	4-27	.....
Next seen.....	.....	.....	9-7	4-28	.....
Common .....	.....	.....	.....	4-27	.....
Last seen	5-7	5-4	10-5	5-16	10-2
Abundance	Common.	Common.	Common.	Abundant.	.....

175. [671] *Dendroica vigorsii* (Aud.). Pine Warbler.

Rare migrant. April 23-26. September 7-29.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1902.	1903.
Observer.....	C. H. B.	C. H. B.	W. S. B.	W. L. M.	W. L. M.
First seen.....	4-23	.....	4-26	.....	.....
Next seen.....	.....	.....	.....	.....	.....
Common.....	.....	.....	.....	.....	.....
Last seen.....	.....	9-27	.....	9-7	9-29
Abundance.....	Rare.	Rare.	.....	Rare.	Rare.

176. [672] *Dendroica palmarum* (Gmel.). Palm Warbler.*

Common migrant. April 23 to May 13. September 22-27. "Rare in 1886 but usually a common migrant" (C. H. B., '86).

Found in orchards and open woods.

The males appear to migrate slightly in advance of the females.

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1886.
Observer.....	C. H. B.	C. H. B.	C. H. B.	C. H. B. W. S. B. G. G. W.
First seen.....	♂ 4-23	♂ 4-25	9-22	4-24
Next seen.....	4-25	5-2	.....	4-26
Common.....	5-3	5-3	.....	.....
Last seen.....	5-13	5-13	9-27	5-6
Abundance.....	Common.	Common.	Not Common.	Rare.

Year.....	1887.	1902.	1903.
Observer.....	G. G. W.	W. L. M.	W. L. M.
First seen.....	.....	4-27	4-30
Next seen.....	.....	.....	5-1
Common.....	.....	.....	5-3
Last seen.....	5-4	.....	5-5
Abundance.....	.....	Rare.	Common.

177. [673] *Dendroica discolor* (Vieill.). Prairie Warbler.

Rare migrant. April 26 to May 16. Song May 12 and 16, 1903.

Has always been found in deeply-thicketed woods.

MIGRATION RECORD.

Year	1885.	1900.	1903.
Observer	C. H. B.	N. B. M.	W. L. M.
First seen	4-26	5 5	5-12
Next seen			5-16
Common			
Last seen			
Abundance	Rare.		Rare.

178. [674] *Seiurus aurocapillus* (Linn.). Oven-bird.

Common summer resident. April 19 to October 12. Formerly abundant (C. H. B., 1886).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1901.
Observer	C. H. B.	C. H. B.	C. H. B.	W. L. M.
First seen	4-19		4-22	5-7
Next seen	4-20		4-24	
Common	4-25			
Last seen		10-3		
Abundance	Abundant.	Abundant.	Common.	Common.

Year	1902.	1902.	1903.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-20		4-28	
Next seen				
Common				
Last seen		10-12		9-20
Abundance	Common.	Common.	Common.	Common.

179. [675] *Seiurus noveboracensis* (Gmel.). Water-Thrush.

Common migrant. March '27 to May 5. September 14 to 18. Song April 12, 1903.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1900.	1902.	1903.
Observer..	C. H. B.	C. H. B.	G. G. W.	G. G. W.	N. B. M.	W. L. M.	W. L. M.
First seen	4-3	9-14	4-17	4-11	4-17	3-27	4-12
Next seen	4-4	.....	4-23	4-12	5-5	4-10	4-16
Common.....	4-5	.....	4-17	.....	.....	.....	4-28
Last seen	4-21	9-18	4-23	.....	5-5	.....	.....
Abundance.....	Abundant.	Common	Common	.....	.....	Common	Common

180. [675a] *Seiurus noveboracensis notabilis* (Ridgw.). Grinnell's Water-Thrush.

Rare migrant. A specimen taken April 23, 1886, by G. G. Williamson is referred to this form. Probably Grinnell's Water-Thrush will be found to be as numerous as the last when more specimens are obtained for exact identification. The differences are rather slight and more relative than absolute, and as the birds seem to vary considerably, it is no wonder that there has been no distinction made between the two forms in the migration records.

A specimen of this Water-Thrush taken at Indianapolis, May 14, 1875 (D. S. Jordan), shows a variation in a generic character. All parts of definitions of the genus *Seiurus* and of keys referring to the tail feathers are substantially as the following from Ridgway (1902): "Inner webs of lateral rectrices without white terminal spot." The individual under consideration has distinctly marked, white, terminal spots on the first and second outer rectrices of the right side, and slight indications of spots on the two opposite, outermost tail feathers.

181. [676] *Seiurus motacilla* (Vieill.). Louisiana Water-Thrush.

Rather common summer resident. March to September 1.

Song April 12, 1903. May 10, 1903, nest and six eggs, among rocks and roots above the mouth of a cave (C. G. L.). June 3, 1901, nest of leaves, grass-lined, under an overhanging ledge (at the same place). It contained six young (W. L. H.).

All the tangled ravines and cascaded cave outlets ring with the striking song of the Louisiana Water-Thrush in April and early May.

A specimen labeled, Bloomington, March, 1885, Foster Hight, is in the University collection. It has been recorded as early in Indiana at least once before (March 30, '96—Sedan), but such dates are rare.

MIGRATION RECORD.

Year.....	1885.	1886.	1901.	1902	1902.	1903.
Observer	C. H. B.	G. G. W. B. W. E. W. S. B.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	4-18	4-4	4-12	4-13	.....	4-5
Next seen.....	4-19	4-10	.....	4-20	.....	4-7
Common	4-25	4-27	.....	.....	.....	.....
Last seen.....	.....	.....	.....	.....	9-1	.....
Abundance.....	Common.	Common.	.....	Common.	Common.	Common.

182. [677] *Geothlypis formosa* (Wils.). Kentucky Warbler.

Common summer resident. April 13 to August 26.

Song May 3, 1903. "They were found breeding near Bloomington, May 6, 1886 (Evermann), where young were noted just out of the nest, June 4, 1886 (Blatchley)" [A. W. B.].

An inhabitant of dense, moist thickets.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.
Observer	C. H. B.	C. H. B.	B. W. E. W. S. B.	G. G. W.
First seen .....	.....	5-2	4-17	5-7
Next seen .....	.....	5-16	4-27	.....
Common .....	.....	.....	.....	.....
Last seen.....	8-26	.....	.....	.....
Abundance.....	Common.	Common.	Common.	.....

Year.....	1892.	1899.	1902.	1903.
Observer	A. B. U.	N. B. M.	W. L. M.	W. L. M.
First seen	5-7	4-13	4-24	4-28
Next seen .....	.....	4-15	4-27	5-3
Common .....	.....	.....	.....	5-13
Last seen.....	.....	.....	.....	.....
Abundance.....	.....	Rare.	Common.	.....

183. [678]
- Geothlypis agilis*
- (Wils.). Connecticut Warbler.

Rare migrant (C. H. B., '86—B. W. E., '87). April 27 and May 6, 1886 (B. W. E.). May 18, 1885 (C. H. B.).

184. [679]
- Geothlypis philadelphia*
- (Wils.). Mourning Warbler.

Rare migrant. Seen on the 16th, 17th, and 27th of May, 1885, by C. H. Bollmann.

185. [681]
- Geothlypis trichas*
- (Linn.). Maryland Yellow-throat.

Abundant summer resident. April 20 to October 19.

Song April 28 to September 20, 1903. May 29, 1901, five young with pin-feathers were found in an arched nest in a bunch of dry grass. June 12, 1903, four young about four or five days old were found in a clump of grass about six inches above the ground (C. G. L.).

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1885.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	C. H. B.	B. W. E. C. H. B.	G. G. W.	E. M. K.	E. M. K.
First seen		4-20	4-28	4-25	4-25	5-	4-30
Next seen		4-21	4-30	4-28	4-27		
Common		5-5	5-5				
Last seen.....	10-17						
Abundance.....	Abundant	Abundant.	Abundant.	Abundant.			

Year	1899.	1900.	1902.	1902.	1903.	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-29	4-24	4-24		4-24	
Next seen		5-5	4-25		4-28	
Common			5-4		4-28	
Last seen				10-19		9-24
Abundance		Common.	Abundant.	Abundant.	Abundant.	Abundant.

186. [683]
- Icteria virens*
- (Linn.). Yellow-breasted Chat.

Abundant summer resident. April 24 to September 28.

Song April 28, 1903. May 17, 1903, a nest and one egg found in a dead bush, which was, however, in a dense clump of living bushes. The nest was found four feet high. It contained four eggs, May 20 (C. G. L.).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1903.
Observer	C. H. B.	C. H. B.	G. G. W. C. H. B.	G. G. W.	A. B. U. E. M. K.	E. M. K.
First seen		4-25	4-24	4-30	5-4	4-30
Next seen		5-3	4-25		5-7	
Common		5 8			5-13	
Last seen	8-30					
Abundance	Abundant.	Abundant.	Common.		Common.	

Year	1899.	1901.	1902.	1902.	1903.	1903.
Observer	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-29	5-4	4-24		4-28	
Next seen		5-7	4-27		4-29	
Common	4-29		5-4		5-3	
Last seen				9-28		9-24
Abundance	Common.	Common.	Abundant	Abundant.	Abundant.	Abundant.

187. [684] *Wilsonia mitrata* (Gmel.). Hooded Warbler.

Rare summer resident. April 20 to September 14.

"At Bloomington, Mr. G. G. Williamson found a nest with six young of this species in a bush, May 27, 1886. It seems to occur there regularly" (A. W. Butler).

No females were seen in 1885 until May 2. The last migrants in the fall of that year were males.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1902.
Observer	C. H. B.	C. H. B.	G. G. W. B. W. E.	G. G. W.	W. L. M.
First seen	4-20	8-9	5-8	5-7	
Next seen	4-21	9-11	5-26		
Common					
Last seen	5-9	9-14			9-1
Abundance	Rare.	Rare.	Rare.		Rare.

188. [685] *Wilsonia pusilla* (Wils.). Wilson's Warbler.

Rare migrant. May 8-14. August 31 to September 18. The extreme dates are also the limits of its stay in Indiana.

MIGRATION RECORD.

Year	1885.	1885.	1886.
Observer	C. H. B.	C. H. B.	B. W. E.
First seen	5-14	8-31	5-8
Next seen			
Common			
Last seen		9-18	
Abundance	Rare.	Rare.	Rare.

189. [686] *Wilsonia canadensis* (Linn.). Canadian Warbler.

A more common migrant than either of the last two species. April 27 to May 18. August 26 to September 15.

MIGRATION RECORD.

Year..	1885.	1885.	1885.	1886.
Observer	C. H. B.	C. H. B.	C. H. B.	W. S. B. B. W. E.
First seen	♂ 4-28	♂ 5-9	8-26	4-27
Next seen	5-8	5-12	8-28	5-4
Common				
Last seen	5-17	5-18	9-15	5-15
Abundance	Common.	Common.	Common.	Common.

190. [687] *Setophaga ruticilla* (Linn.). American Redstart.*

Abundant migrant and common summer resident. April 12 to October 19; the limits of its residence in the State. Scarce in 1885 and 1886 (B. W. E.).

Song April 12, 1903. Nest and three eggs June 12, 1882.

The males arrive about a week in advance of the females. In fall Redstarts are very abundant and are found nearly everywhere.

MIGRATION RECORD.

Year	1885.	1885.	1885.	1886.	1887.	1892.
Observer	C. H. B.	C. H. B.	C. H. B.	G. G. W. A. W. B.	G. G. W.	A. B. U.
First seen	4-21	4-30	.....	5-12	4-29	4-30
Next seen	4-22	5-10	.....	5-26	5-1	.....
Common	5-11	5-11	.....	.....	.....	.....
Last seen .....	.....	.....	10-9	.....	.....	.....
Abundance	Common.	Common.	Common.	.....	.....	.....

Year	1893.	1900.	1902.	1902.	1903.	1903.
Observer	E. M. K.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	5-6	5-5	4-27	.....	4-12	.....
Next seen .....	.....	.....	.....	.....	4-13	.....
Common .....	.....	.....	.....	.....	4-28	.....
Last seen .....	.....	.....	.....	10-19	.....	9-20
Abundance .....	.....	.....	Not common	Abundant.	Abundant.	Common.

191. [697] *Anthus pensilvanicus* (Lath.). American Pipit.*

Common migrant (C. H. B., '86). May 17-18—common 19, 1885 (C. H. B.). April 1, 1901.

The Pipit probably occurs regularly in considerable numbers, and the above record is imperfect on account of faulty observation.

192 [703] *Mimus polyglottos* (Linn.). Mockingbird.*

Moderately common summer resident.

The Mockingbird was first noted in this locality April 29, 1882, by B. W. Evermann. He says that Bloomington was the farthest north it had been observed in the State at that time. C. H. Bollmann says it was very rare in 1886. He obtained a set of eggs in 1884.

Song April 2, 1903. Two nests were complete April 30, 1901. They were on the northeast pike about one fourth mile apart. The males were singing about these nests both day and night. May 2, 1902, a nest and two eggs were taken from a small thorn bush. The eggs had been broken in some manner (W. L. H.). June 6, 1902, a nest and fresh eggs were found about three feet up in a hedge (C. G. L.).

MIGRATION RECORD.

Year.....	1882.	1885.	1886.	1893.	1901.	1902.	1903.
Observer.....	B. W. E.	C. H. B.	G. G. W. C. H. B.	E. M. K.	V. H. B. W. L. M.	W. L. M.	W. L. M.
First seen	4-29	5-13	5-2	5-15	3-24	3-31	4-2
Next seen			6-1	5-18	4-30	4-27	4-3
Common.....						5-10	
Last seen.....							
Abundance.	Rare.	Rare.	Rare.		Common.	Common.	Common.

193. [704] *Galeoscoptes carolinensis* (Linn.). Catbird.*

Abundant summer resident. April 2 to October 6.

Song April 9 to September 20, 1903. Nestbuilding May 3, 1903. Nest and two eggs May 7, 1902 (G. Hltze). On May 12, 1902, five eggs were taken from a nest; a new nest was begun on the next day; the lining was partly made on the 14th and the nest was finished on the 16th. There was one egg on the 17th and four on the 20th. A nest with four fresh eggs was found June 4, 1901 (W. L. H.).

The earliest and latest individuals seen are generally found in the woods in deep-tangled thickets; consequently Catbirds are rarely seen at the extreme dates indicated above.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	W. S. B. C. H. B.	G. G. W.	E. M. K.	E. M. K.
First seen		4-20	4-16	4-25	4-22	4-10
Next seen.....		4-21	4-17	4-27	4-27	4-17
Common		4-24			4-27	4-20
Last seen	10-6					
Abundance	Abundant.	Abundant.			Common.	Common.

Year	1891.	1900.	1901.	1902.	1903.	1903.
Observer	N. B. M.	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-28	4-14	4-28	.....	4-5	.....
Next seen	4-29	4-16	5-3	.....	4-9	.....
Common	4-29	4-20	5-5	.....	4-28	.....
Last seen .....	.....	.....	.....	10-5	.....	9-20
Abundance	Common.	Common.	Common.	Common.	Abundant.	Abundant.

194. [705] *Torostoma rufum* (Linn.). Brown Thrasher.* Figs. 25-6.

Common summer resident. March 16 to October 12.

Song March 20, 1903. Nest begun April 4, 1903. Nest and four eggs in a berry bush in a corner of a yard, April 20. Young out of nest May 8 (C. G. L.). Four young flying about freely May 13. Nest with 3 eggs as late as June 9, '02 (G. Hitze).

One of our best songsters; most often found just on the outskirts of town.

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1887.	1892.	1893.
Observer.....	C. H. E.	C. H. B.	C. H. B.	W. S. B. B. W. E. G. G. W.	G. G. W.	E. M. K. A. B. U.	E. M. K.
First seen	3-23	4-4	.....	3-28	4-12	4-2	4-2
Next seen ....	.....	4-5	.....	4-5	.....	4-9	4-6
Common.....	.....	4-18	.....	4-14	.....	4-9	4-6
Last seen .....	.....	.....	10-3	.....	.....	.....	.....
Abundance...	.....	Common.	Common.	Common.	.....	Common.	Common.

Year.....	1899.	1900.	1901.	1902.	1902.	1903.
Observer	N. B. M.	N. B. M.	W. L. M. V. H. B.	W. L. M.	W. L. M.	W. L. M.
First seen	4-16	4-23	4-7	3-16	.....	3-20
Next seen	4-19	.....	4-10	3-24	.....	3-21
Common	4-21	.....	4-14	4-23	.....	4-3
Last seen .....	.....	.....	.....	.....	10-12	.....
Abundance	Common.	Common.	Common.	Common.	Common.	Common.

195. [718] *Thryothorus ludovicianus* (Lath.). Carolina Wren.*

Common resident. Sings at all times in the year. The Carolina Wren became common here about 1883 (B. W. E.). "It was heard nearly every day that winter."

An inhabitant of dense thickets and brush-piles. Not often seen away from these places except when singing. Ordinarily a very hard bird to flush. Several times the writer has cornered a Carolina Wren in a brush-pile, and walked up to the edge of it without the bird leaving. Once, even, I walked over a brush-heap with a wren in it and the bird left only when the heap was torn to pieces. (March 3, '01). Another instance of this habit is as follows: On a cold, snowy, windy day, I was investigating the base of a hollow tree. After rummaging around on the inside for three or four minutes, I touched a Carolina Wren which then flew hastily out (February 2, '02).

196. [719] *Thryomanes bewickii* (Aud.). Bewick's Wren.*

Very common summer resident. March 6 to October 12. Bewick's Wren was taken in this county as early as 1876 (Ind. Univ. Mus.). It was a common summer resident ten years later, and now is very common and almost entirely replaces the next species (*T. aëdon*) which is a rather rare bird.

Song March 13, 1903; breeding March 25, 1901. Nest and eight eggs in an old sack hung over a fence, April 14, 1903 (C. G. L.).

Most frequently found near houses; common in the city; a persistent songster in March and April.

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1893.
Observer.....	C. H. B.	C. H. B.	G. G. W. W. S. B.	G. G. W.	E. M. K.
First seen.....	4-5	.....	3-26	4-2	3-20
Next seen.....	4-7	.....	4-8	4-13	.....
Common.....	4-18	.....	.....	.....	.....
Last seen.....	.....	9-27	.....	.....	.....
Abundance.....	Common.	Not common	Common.	Common.	.....

Year.....	1899.	1900.	1901.	1902.	1903.
Observer.....	N. B. M.	N. B. M.	W. L. M.	W. L. M.	P. J. H. W. L. M.
First seen.....	4-13	4-2	3-25	.....	3-6
Next seen.....	4-14	4-7	3-26	.....	3-8
Common.....	4-21	4-15	.....	.....	3-21
Last seen.....	.....	.....	.....	10-12	.....
Abundance.....	Common.	Common.	Common.	Common.	Common.

197. [721.] *Troglodytes aëdon* Vieill. House Wren.* Fig. 9.

Rather rare summer resident. March 9 to September 16. The House Wren was a rare summer resident and less common than *T. bewickii* in 1887 (B. W. E.).

A nest of the House Wren was found April 25, 1903, in a tin can sitting on a fence. The nest was just completed and contained no eggs (C. G. L.). May 21, 1902, seven well-feathered young were found; two days later these had flown (G. Hitze).

The dates for 1901 would probably be more correctly attributed to *T. bewickii*. The song was heard that year on February 21 (V. H. B.).

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.
Observer.....	C. H. B.	C. H. B.	G. G. W.	G. G. W.
First seen	4-19	.....	5-1	4-30
Next seen	4-20	.....	5-14	.....
Common.....	5-6	.....	.....	.....
Last seen .....	.....	9-16	.....	.....
Abundance.....	Common.	Not common	.....	Not common

Year	1892.	1901.	1903.
Observer	A. B. U. E. M. K.	V. H. B.	W. L. M.
First seen	3-27	2-11	3-9
Next seen.....	3-31	2-13	4-29
Common .....	.....	3-18	.....
Last seen.....	.....	.....	.....
Abundance.....	.....	Common.	Rare.

198. [722] *Olbiorchilus hiemalis* (Vieill.). Winter Wren.*

Rare in winter; more common during the migrations. October 4 to May 3. Absent during the winter 1902-3.

Most of the individuals departed April 19, 1885 (C. H. B.).

MIGRATION RECORD.

Year.....	1885.	1885.	1886.	1887.	1900.	1901.	1903.
Observer.....	C. H. B.	C. H. B.	G. G. W.	G. G. W.	N. B. M.	V. H. B.	W. L. M.
First seen		10-4					
Next seen		10-9					
Common	4-4						
Last seen	5-3		4-24	4-20	4-17	3-3	4-30
Abundance...	Not common	Common	Not common	Not common			Rare.

199. [725] *Telmatoodytes palustris* (Wils.). Long-billed Marsh Wren.

Rare migrant. May 10, 1886 (C. H. B.—G. G. W.); May 13 (B. W. E.); September 29, 1903, common.

200. [726] *Certhia familiaris americana* (Bonap.) Brown Creeper.*

Rare in winter, common in spring and fall (C. H. B., '86). September 27 to May 30.

In April this bird may generally be found wherever there are Kinglets. Most of them departed April 20, 1885 (C. H. B.).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1888.	1899.
Observer	C. H. B.	C. H. B.	G. G. W.	G. G. W.	G. G. W.	
First seen	4-1	9-27	4-13	4-9		
Next seen	4-2	10-4	4-18	4-11		
Common	4-4					
Last seen	4-25				5-30	4-10
Abundance	Common.	Common.	Common.	Common.		Rare.

Year.....	1900.	1901.	1902.	1902.	1903.	1892.
Observer.....	N. B. M.	V. H. B.	W. L. M.	W. L. M.	W. L. M.	E. M. K.
First seen.....	4-8	3-9	3-12	11-18	1-17	.....
Next seen.....	4-12	3-18	3-27	.....	1-18	.....
Common.....			4-13	.....		.....
Last seen.....	4-17	.....	4-19	12-14	4-12	4-7
Abundance.....	Not common	.....	Common.	Common.	Common.	Common.

201. [727] *Sitta carolinensis* Lath. White-breasted Nuthatch.*

Common resident. Attempts at song March 8, 1902; five days earlier they were seen going in and coming out of a cavity in a tree, which they afterwards used as a nest.

202. [728] *Sitta canadensis* Linn. Red-breasted Nuthatch.*

Common migrant and rare winter resident. September 20 to May 12. "They were found wintering at Bloomington the winters of 1882-3 and 1885-6" (Blatchley). Also winters of 1884-5; 1902-3.

MIGRATION RECORD.

Year.....	1883.	1885.	1885.	1886.	1886.	1887.
Observer.....	B. W. E.	C. H. B.	W. S. B. C. H. B.	B. W. E. W. S. B.	W. S. B.	G. G. W.
First seen.....	2-10	1-31	10-2	2-22	.....	.....
Next seen.....	.....	2-2	10-7	2-23	.....	.....
Common.....						
Last seen.....	.....	5-12	11-25	4-24	12-21	5-7
Abundance.....	Rare.	Not Common.	Not Common.	Not Common.	Common.	.....

Year.....	1901.	1902.	1902.	1903.	1903.
Observer.....	V. H. B.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	.....	2-28	10-12	1-14	9-20
Next seen.....	.....	3-10	10-26	1-18	9-24
Common.....	.....	.....	.....	4-29	9-25
Last seen.....	4-7	4-24	11-30	5-2	.....
Abundance.....	.....	Rare.	Rare.	Common.	Common.

203. [731] *Bæolophus bicolor* (Linn.). Tufted Titmouse.*

Abundant resident. Nestbuilding April 12, 1903; May 7, 1901.

An ubiquitous species with a great variety of calls and songs.

204. [735] *Parus atricapillus* Linn. Chickadee.*

Seen here only as a winter visitor. November 7 to May 15. It is probably not a common winter resident, though so reported by C. H. Bollman ('86). W. S. Blatchley says it was as common a winter resident, and B. W. Evermann says it was as common a resident as *P. carolinensis* in 1886. N. B. Myers says a few breed, but most of them go north. The latter records are probably due to confusion with the next species. All the specimens in the University collection have been examined and only one from this locality that was labeled *P. atricapillus* was identified correctly. There are, however, several unlabeled ones which come under this species. Its true status is that of an uncommon winter visitor.

MIGRATION RECORD.

Year.....	1884.*	1885.	1886.	1892.	1895.	1899.	1900.
Observer.....	C. H. E.	C. H. B.	W. S. B.	A. B. U.	L. Hughes.	N. B. M.	N. B. M.
First seen .....	.....	.....	.....	.....	11-7	.....	.....
Next seen .....	.....	.....	.....	.....	.....	.....	.....
Common.....	.....	3-26	.....	.....	.....	.....	.....
Last seen.....	3-3	4-16	5-15	2-13	.....	5-2	4-28
Abundance.....	.....	Common.	.....	.....	.....	.....	.....

205. [736] *Parus carolinensis* Aud. Carolina Chickadee.*

Common resident. Seen more often and in greater numbers after March 8, 1903; February 18, 1902; April 30, 1885 (C. H. B.).

Song January 18 to November 28, 1902. Mating March 15, 1902; nest-building April 14, 1901. May 29, 1901, four young with pin-feathers and one egg were found in a nest about three feet from the ground in a willow stub. The nest was about three inches in depth and was lined with rabbit fur and other soft materials. The young were not yet able to sit on a perch, June 3 (W. L. H.).

206. [748] *Regulus satrapa* Licht. Golden-crowned Kinglet.*

Abundant migrant and rare winter resident. February 4 to May 7. September 21 to November 28. "They are reported as winter residents from Bloomington (Evermann, Blatchley). Also by G. G. Williamson.

Song heard April 16, 1902. This bird has a surprisingly loud, sharp whistle, with a somewhat ventriloquial effect.

On April 6, 1902, a Golden-crowned Kinglet was observed to catch a moth of apparently half its own size. It took several minutes time and much trouble to finish the insect and it was dropped once but was recovered and finally disposed of.

MIGRATION RECORD.

Year	1884.	1885.	1885.	1886.	1887.	1892.	1893.	1895.
Observer....	B. W. E.	C. H. B.	C. H. B.	G. G. W.	G. G. W.	E. M. K.	E. M. K.	L. Hughes.
First seen ...	2-10	.....	10-3	3-19	.....	4-4	2-4	.....
Next seen ...	.....	.....	10-5	.....	.....	4-9	2-11	.....
Common....	.....	4-2	10-9	4-13	.....	4-9	.....	.....
Last seen ...	.....	4-19	10-25	4-13	5-7	4-24	.....	11-7
Abundance.	Rare.	Abundant	Abundant	.....	.....	Common	Common	.....

Year.....	1899.	1900.	1901.	1902.	1902.	1903.	1903.
Observer.....	N. B. M.	N. B. M.	W. L. M. V. H. B.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	4-10	4-4	3-20	3-27	10-5	3-18	9-21
Next seen	4-13	4-6	3-22	3-28	10-16	3-19	9-22
Common.....	.....	.....	4-5	4-15	10-18	3-23	9-21
Last seen.....	.....	4-12	4-21	4-23	11-28	4-19	.....
Abundance.....	.....	.....	Abundant.	Common	Common	Abundant.	Abundant.

207. [749] *Regulus calendula* (Linn.). Ruby-crowned Kinglet.*

Abundant migrant and rare winter resident. March 23 to May 18. September 21 to October 24. "They have been noted, in winter, in Monroe County, by Profs. Evermann and Blatchley." (A. W. Butler.)

Song April 5, 1901; 10, 1903. Mating April 19 and 24, 1903. April 10, 1903. Heard a Ruby-crowned Kinglet singing a varied and pretty song which was so loud that it did not seem possible that so small a bird could produce it. The Ruby-crown also gave a little *chuck*, a short whistle, and another note like that of a Canada Nuthatch, but less complaining. The last note was repeated several times. On April 19, two Ruby-crowns were seen, one of which with crown erected and singing, was chasing the other. Was this not mating? On the 24th two other in-

dividuals were seen doing the same thing, and another was heard singing. The song reminds one of nothing more plainly, than of the softer, less ambitious efforts of a canary. It is varied with little chirps and *chuck* and *chirr* notes.

The bulk left May 2, 1885 (C. H. B.).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	C. H. B. G. G. W.	G. G. W.	E. M. K.	E. M. K.
First seen	4-18	9-28	4-19	4-10	4-9	4-19
Next seen	4-19	10-3	4-22	4-11	4-23	.....
Common	4-22	19-8	.....	.....	4-27	.....
Last seen	5-11	10-24	4-24	.....	5-18	.....
Abundance	Abundant.	Abundant.	Common.	.....	Not common	.....

Year	1901.	1902.	1902.	1903.	1903.
Observer	W. L. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen	3-29	4-6	10-2	3-23	9-21
Next seen .....	.....	4-11	10-4	3-25	9-22
Common .....	.....	4-13	10-2	3-23	9-21
Last seen	4-5	4-27	10-15	4-30	.....
Abundance	Common.	Common.	Common.	Abundant.	.....

208. [751] *Poliophtila cærulea* (Linn.). Blue-gray Gnatcatcher.* Figs. 27-8.

Common summer resident. April 5 to September 12.

Song and mating April 12, 1903. A nest containing one egg of a Cowbird was found April 22, 1886 (B. W. E.). This was ten days after their arrival. Three days after they arrived in 1902 Gnatcatchers were seen nestbuilding (April 24); the nest was half-finished on the 27th. In 1903 no completed nest was found until the 27th of April, which was 20 days after their arrival. On May 26, 1903, a nest and four well-incubated eggs were found. The nest was saddled on a limb of a small elm, about fourteen feet from the ground (C. G. L.). W. S. Blatchley (1888), in "The Audubon Magazine," describes a two-story nest of the Blue-gray Gnatcatcher, taken near Bloomington. A Cowbird had deposited an egg

In the nest proper and the second story was built over this egg (A. W. Butler).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.
Observer	C. H. B.	C. H. B.	B. W. E.	G. G. W.	A. B. U. E. M. K.
First seen	4-5	.....	4-12	4-11	4-17
Next seen	4-6	.....	4-13	.....	4-23
Common	4-17	.....	.....	.....	.....
Last seen .....	.....	9-12	.....	.....	.....
Abundance	Common.	Common.	Common.	.....	.....

Year	1893.	1899.	1901.	1902.	1903.
Observer	E. M. K.	N. B. M.	W. L. M. C. H. E.	W. L. M.	W. L. M.
First seen	4-6	4-13	4-29	4-15	4-7
Next seen	5-4	4-15	5-1	4-19	4-11
Common .....	.....	.....	.....	4-19	4-12
Last seen .....	.....	.....	.....	.....	.....
Abundance .....	.....	.....	.....	Common.	Common.

209. [755] *Hylocichla mustelina* (Gmel.). Wood Thrush.*

Common summer resident. April 12 to October 12.

Song May 4, 1904 (F. E. L.). Nest and eggs May 6, 1886 (B. W. E.).

A resident of the deeper woods. There his fine song may be heard at its best in early May.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.
Observer	C. H. B.	C. H. B.	W. S. B. C. H. B. G. G. W.	G. G. W.	A. B. U.
First seen	4-20	.....	4-17	4-25	5-7
Next seen	4-21	.....	4-22	.....	.....
Common	4-28	.....	4-24	.....	.....
Last seen .....	.....	9-19	.....	.....	.....
Abundance	Abundant.	Abundant.	Abundant.	.....	.....

Year.....	1900.	1901.	1902.	1902.	1903.
Observer.....	N. B. M.	W. L. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	5-2	5-6	4-24	.....	4-12
Next seen.....	5-4	.....	4-25	.....	4-17
Common.....	5-9	.....	.....	.....	5-5
Last seen.....	.....	.....	.....	10-12	.....
Abundance.....	Common.	.....	Moderat'ly Common.	Moderat'ly Common.	Common.

210. [756] *Hylocichla fuscescens* (Steph.). Wilson's Thrush.

Rather rare migrant. April 23 to May 16. September 1 to 13. Apparently common in 1885 (C. H. B.) now the rarest of the Thrushes.

Most of the birds departed May 10, 1885 (C. H. B.).

MIGRATION RECORD.

Year.....	1885.	1885.	1885.	1902.	1903.
Observer.....	C. H. B.	C. H. B.	C. H. B.	W. L. M.	W. L. M.
First seen.....	4-23	9-1	.....	5-4	4-26
Next seen.....	4-26	9-8	.....	.....	.....
Common.....	5-4	.....	.....	.....	.....
Last seen.....	5-16	9-13	5-13	.....	.....
Abundance.....	Common.	Common.	Common.	Rare.	Rare.

211. [757] *Hylocichla alicia* (Baird). Gray-cheeked Thrush.

Rather uncommon migrant. April 10 to May 17. September 2 to 25. Formerly much more common; abundant in 1885 (C. H. B.).

Some question has been raised about the validity of the records of early arrival of the present species in the central states. The dates recorded are earlier than those noted for the arrival of the species on the southern coast of the United States. If these records are proved to be correct, they will establish what is at least not a common phenomenon of migration a journey from Central America, at least, across the Gulf and half across the continent before a stop is made. The very number of these early records from different points and by different observers in Indiana, is almost sufficient proof of their reliability. Some of these records are: Spearsville, April 14 and 15, 1894; April 3 to 10, 1895 (V. H. Barnett); Laporte, April 10 to 12, 1892 (Charles Barber); Brown County,

April 14, 1894 (E. M. Kindle) and Bloomington, April 10, 1903 (W. L. M.). It is claimed that the more usual and expected occurrence would be the arrival of this species at about the time of arrival of Wilson's and the Olive-backed Thrushes. Further observation and especially collection of specimens is needed to settle the question. The Gray-cheeked Thrush is only rarely recorded as late as early October, as are also the Veery and Swainson's Thrushes. But a specimen is recorded in the catalogue of the Indiana University Museum, taken by David Starr Jordan, November 1, 1875, at Indianapolis.

MIGRATION RECORD.

Year	1885.	1885.	1886.	1903.
Observer	C. H. B.	C. H. B.	G. G. W. W. S. B.	W. L. M.
First seen	4-22	9-2	5-1	4-10
Next seen	4-25	9-4	5-17	4-20
Common	5-3	9-5	.....	.....
Last seen	5-17	9-25	.....	.....
Abundance	Abundant.	Abundant.	.....	Rather rare.

212. [758a] *Hylocichla ustulatus swainsonii* (Cab.). Olive-backed Thrush.

Rather rare migrant. April 28 to May 19. September 1 to October 2. C. H. Bollmann considered this species an abundant migrant in 1885. At present only a few are seen each year.

Most of the individuals departed May 17, 1885 (C. H. B.). Perhaps the reduction in numbers of all the less hardy, wood-loving thrushes, in recent years is due to the cutting away of timber in this region. There are very few of those cool, dark, virgin forests, which are said to be the favorite haunts of our wood thrushes, remaining in this region at present.

MIGRATION RECORD.

Year	1885.	1885.	1887.	1892.	1903.
Observer	C. H. B.	C. H. B.	G. G. W.	A. B. U. E. M. K.	W. L. M.
First seen	5-2	9-1	4-28	5-9	4-29
Next seen	5-3	9-6	.....	5-14	4-30
Common	5-10	9-18	.....	.....	.....
Last seen	5-19	10-2	.....	5-15	.....
Abundance	Abundant.	Abundant.	.....	.....	Rare.

213. [759b] *Hylocichla guttata pallasii* (Cab.). Hermit Thrush.

Common migrant March 23 to May 3. October 3 to November 21. The extreme dates mark the limits of its stay in the State, unless it has recently been found to winter in the lower Wabash Valley.

The most common of the Thrushes in the migratory season. Found in second-growth and open woods.

The majority left April 25, 1885 (C. H. B.).

MIGRATION RECORD.

Year	1885.	1885.	1886.	1887.	1892.	1893.
Observer	C. H. B.	C. H. B.	W. S. B.	G. G. W.	E. M. K. A. B. U.	E. M. K.
First seen	3-31	10-3	4-17	4-12	4-2	4-19
Next seen	4-1	10-4	.....	.....	4-9	4-27
Common	4-19	10-10	.....	.....	.....	.....
Last seen	4-28	10-25	.....	.....	4-23	.....
Abundance	Common.	Common.	.....	.....	Common.	Common.

Year	1900.	1901.	1902.	1903.	1903.
Observer	N. B. M.	C. H. E.	W. L. M.	W. L. M.	W. L. M.
First seen	4-9	4-29	3-23	4-5	.....
Next seen .....	.....	.....	3-25	4-7	.....
Common .....	.....	.....	.....	4-12	.....
Last seen .....	.....	.....	3-27	5-3	11-21
Abundance	Not common	.....	Common.	Common.	Common.

214. [761] *Merula migratoria* (Linn). American Robin.* Fig. 30.

Resident; abundant in all seasons except winter when it is generally rather rare. However, on January 30, 1893, a winter day, 300 Robins were seen by E. M. Kindle. This was probably a band of migrants, and its occurrence then was not unusual. They become common from the middle of February to the middle of March. Some winters they are entirely absent—that of 1900-01 for instance. They have been observed in flocks here as late as April 13, 1903. There is generally a period in fall

when Robins are scarce, followed by a period of abundance before the numbers dwindle down to the usual winter representation. This is caused in all probability by the summer residents of more northern regions, halting here in what to them is a mild climate, after our own summer birds have departed. A similar movement is noticeable among the Bluebirds. The condition of mid-autumn abundance occurred October 22, 1902. Three days later these birds became rarer and flocks were seen migrating at a considerable elevation by day.

Singing began very early in 1903. One was heard singing his spring song, very low as if in rehearsal, January 16, and one burst out in full song January 20. The next song was heard February 24. In other years I have heard an imperfect song as early as February 23, and the complete song March 4, 1902. They continue their songs till late in the year. Perfect songs are heard in August, and on September 1, 1902, a Robin was heard singing with all the vigor if not the perfection of spring. Songs, perhaps slightly imperfect, but not very noticeably so, have been heard as late as October 26, 1902.

They have been observed mated by February 26, 1903. The first nest has been completed as early as March 21, 1903 (P. J. H.). Very little mud was used in the construction of this nest. That this was early in the season as well as in the calendar may be judged by the fact that an inch of snow fell shortly afterwards. The first egg was found March 29, 1903. It was in a nest in a beech tree. The nest was within ten feet of a window in Science Hall (C. G. L.). A full set was not found until April 8, but on April 26 two half-grown young, not accompanied by their parents, were observed. On May 3 two young nearly full grown were seen. Twenty-four days (April 23 to May 17) elapsed between the laying of the third egg and the flight of the young in a nest watched in 1892 (G. Hitze).

One was noticed before daybreak on March 26, 1903, sitting on the ground and singing vigorously. It was observed in the same place the next morning.

When the country is snowbound Robins resort to peculiar methods to obtain a livelihood; one was seen wading about in a shallow spring-fed stream, feeding in the manner of a Sandpiper, February 9, 1902.

MIGRATION RECORD.

Year	1883.	1884.	1885.	1886.	1887.	1892.
Observer	B. W. E.	C. H. E.	C. H. B.	B. W. E. G. G. W.	G. G. W.	E. M. K.
First seen.	2-10	2-9	2-14	2-13	1-16	2-1
Next seen.....	2-13	.....	3-3	2-20	1-17	2-6
Common	2-13	.....	3-7	2-23	2-7	2-6
Last seen .....	.....	.....	.....	.....	.....	.....
Abundance	Abundant.	.....	Abundant.	Common.	.....	Common.

Year	1893.	1899.	1900.	1901.	1902.	1903.
Observer	E. M. K.	N. B. M.	N. B. M.	V. H. B. W. L. M.	W. L. M.	W. L. M.
First seen.....	1-28	2-12	2-20	2-19	.....	.....
Next seen.....	1-29	2-19	3-3	2-27	.....	.....
Common	2-13	3-16	3-9	3-3	3-1	2-27
Last seen .....	.....	.....	.....	.....	.....	.....
Abundance	Common.	Common.	Common.	Common.	Abundant.	Abundant.

215. [766] *Sialia sialis* (Linn.). Bluebird.* Figs. 31-2.

Resident; abundant in all seasons except winter, moderately common then. Becomes abundant before the middle of March (February 22 to March 16). Seen in pairs February 22, 1884 (C. H. E.). All records of Bluebirds for the winters 1900-01 and 1901-2 were made by groups and show just how the birds were met. Nearly all of these groups are twos or multiples of two, and of them equal numbers were male and female. This is pretty good evidence that many Bluebirds remain paired throughout the year. However, some of the summer residents mate here, and they were seen mating March 1, 1903. Two males were singing madly and flying excitedly about a female, the principal characteristic of whose attitude seemed to be utter indifference to both of her suitors.

Singing February 10, 1903. The first nest was finished March 15, 1903; it was in a fencepost which had rotted in two just above the ground and which swayed on its supporting wires, with every wind. A nest with three eggs was found March 22; and one with four eggs

April 2. On April 4 a nest and six eggs were found in an old Woodpecker's hole (C. G. L.). On April 27, four young Bluebirds 3-4 days old were found and on the 29th seven young, fully feathered and about four inches long, were seen flying about freely with their parents.

On November 30, 1902, Bluebirds were acting as Phœbes are often seen to do; they used a perch near the ground from which they suddenly flew down, picked up an insect or other morsel of food, always returning to the same perch.

MIGRATION RECORD.

Year	1883.	1884.	1885.	1886.	1887.
Observer.....	B. W. E.	C. H. E.	C. H. B.	B. W. E.	B. W. E.
First seen.....	1-12	2-2	.....	2-20	1-1
Next seen.....	.....	2-9	.....	2-21	1-3
Common.....	.....	2-22	2-28	2-22	.....
Last seen .....	.....	.....	.....	.....	.....
Abundance.....	Abundant.	Common.	.....	Common.	.....

Year	1892.	1900.	1901.	1902.	1903.
Observer.....	A. B. W.	N. B. M.	W. L. M.	W. L. M.	W. L. M.
First seen.....	1-28	2-19	2-10	.....	.....
Next seen.....	2-6	2-22	2-17	.....	.....
Common.....	.....	.....	3-2	3-16	3-8
Last seen .....	.....	.....	.....	.....	.....
Abundance.....	Common.	Rare.	Common.	Abundant.	Abundant.

SUPPLEMENTAL LIST.

1. [51] *Larus argentatus* (Brünn). Herring Gull.

Very probably seen by J. J. Batchelor, April, 1902. See note under *L. philadelphia* in main list.

2. [208] *Rallus elegans* Aud. King Rail.

Rare migrant in Brown County (E. M. K. '94). Will probably be found to have the same rank in avifauna of this county.

3. [226] *Himantopus mexicanus* (Müll.). Black-necked Stilt.

C. H. Bollmann gives a queried record for Monroe County in his list of 1886, and ranks it as rare. It has not otherwise been recorded in the State.

4. [305] *Tympanuchus americanus* (Reich.). Prairie Hen.

Given in C. H. Bollmann's list of 1886 as one of the birds which had to his knowledge been found in the county but which had disappeared.

5. [310] *Meleagris gallopavo merriami* Nelson. Wild Turkey.

A rare resident as late as 1886 (C. H. B.), when a few were seen each year (W. S. B.). In 1887 B. W. Evermann said that although he had not observed it, it was still occasionally taken. In 1894 E. M. Kindle wrote that it was almost if not entirely extinct in Brown County. The Wild Turkey is without doubt entirely extinct in this county.

6. [315] *Ectopistes migratorius* (Linn.). Passenger Pigeon.

A rare migrant in 1886 (C. H. B.). B. W. Evermann in 1887 classed it as formerly abundant but then rare. The last date at hand for this county is April 18, 1885, when ten were seen by C. H. Bollmann. It has been observed since that time in Brown County—March 7, 1894 (E. M. K.); 60 were seen April 12, 1895 (V. H. B.).

7. [382] *Conurus carolinensis* (Linn.). Carolina Paroquet.

Given the same position by C. H. Bollmann in his list of 1886 as the Prairie Hen. (See above.) "Judge A. L. Roach of Indianapolis says Parakeets were common in Monroe County in 1828 when his father's family moved there. The family came from western Tennessee, where the bird was abundant and well known. He says they were still there

in 1836. * * * B. W. Evermann learned from the late Louis Bollmann that they were there in 1831. * * * W. B. Seward of Bloomington said that these birds were well known to him from 1840-1850 and were in many places common" (A. W. Butler in "The Auk," Vol. IX, pp. 49-56). "Mr. W. B. Seward informs me of obtaining some five, he thinks, young Paroquets from a farmer's boy in Owen County (adjoining Monroe) in 1845. His impression is they were taken from the inside of a hollow tree, on the borders of White River. This is the farthest north we have any account of their nesting" (Butler, Birds of Indiana, 1897). In Brown County it was formerly abundant along Bean Blossom Creek (E. M. K.).

8. [392] *Campephilus principalis* (Linn.). Ivory-billed Woodpecker.

"Formerly common, now rare" (B. W. E. '87). Recorded by C. H. it was formerly found in Monroe County" (Butler).

9. [486] *Corvus corax sinuatus* (Wagl.). American Raven.

"Formerly common, now rare" (B. W. E. '87). Recorded by C. H. Bollmann ('86) along with the Prairie Hen and Parakeet as one of the birds which had formerly been found in the county, but which was then extinct.

ADDENDA.

- 30.5. [212.] *Rallus virginianus* (Linn.). Virginia Rail.

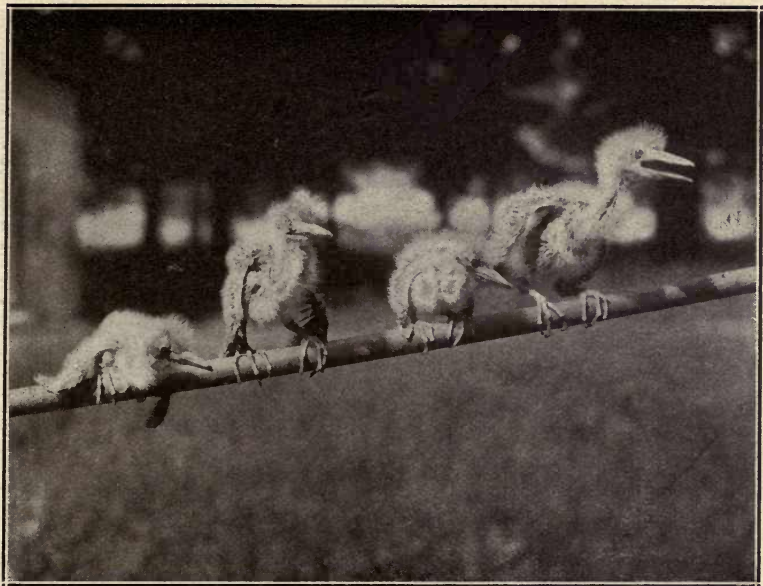
Uncommon migrant. Several were seen and one killed with a club in a yard in town, April 22, 1904.



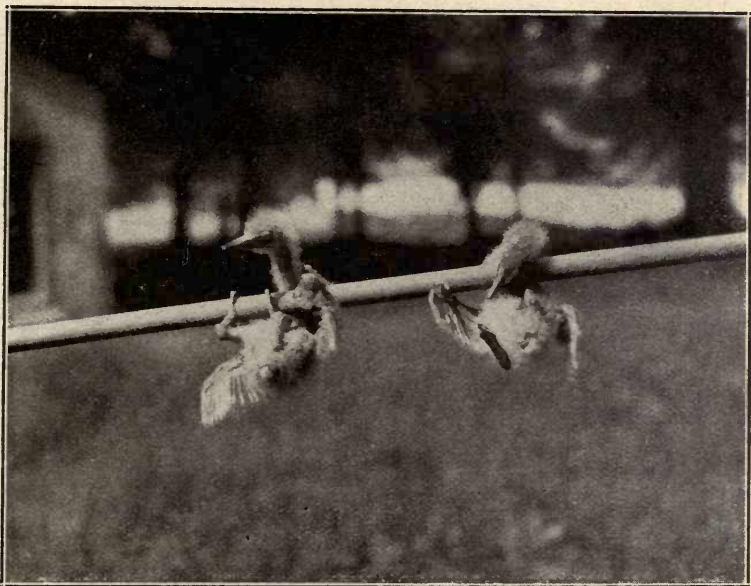
No. 1. Nest and eggs of Little Green Heron in an apple tree.



No. 2. Same nest, with four young and two eggs yet unhatched.



No. 3. Four young of Little Green Heron posing for the camera,



No. 4. Cut of two young Herons, showing the tenacity with which they cling to a stick.

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No. 5. Two young Little Green Herons posing.



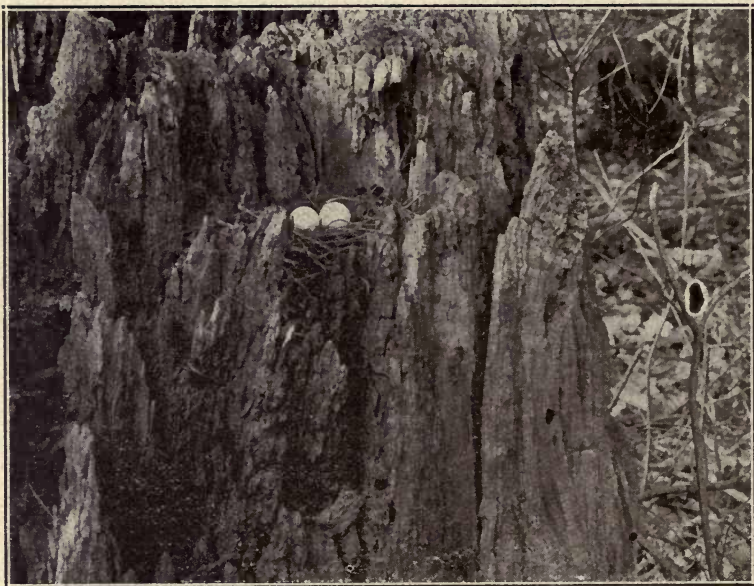
No. 6. Nest of Killdeer on ground.



No. 7. Nest and eggs of Dove on rail fence. Nest is simply a slight addition to old nest of some other bird.



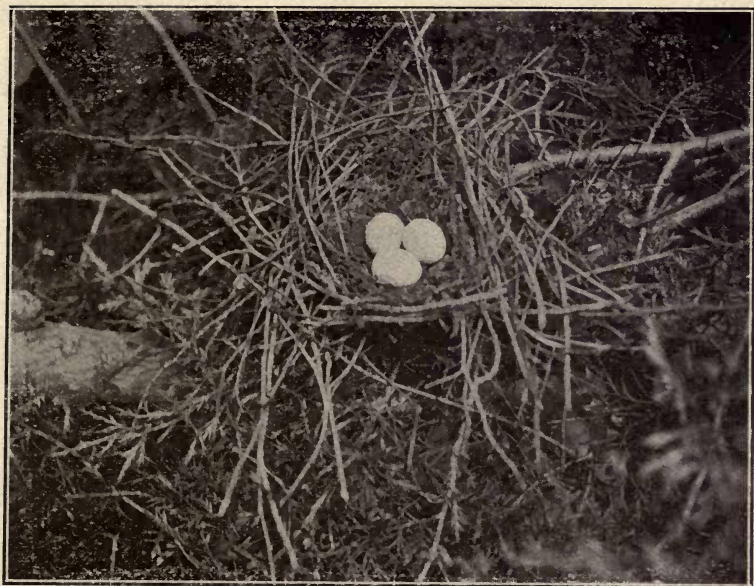
No. 8. Eggs of Dove on ground. No nest whatever.



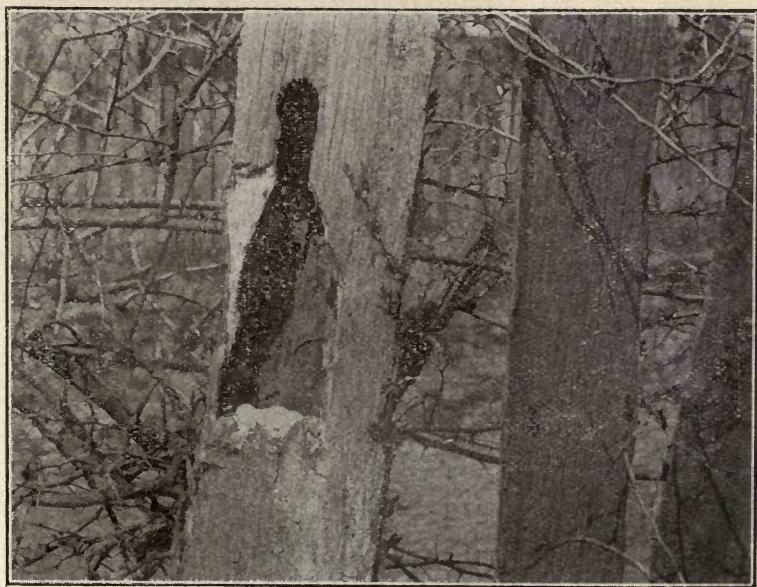
No. 9. Nest and eggs of Dove on stump.



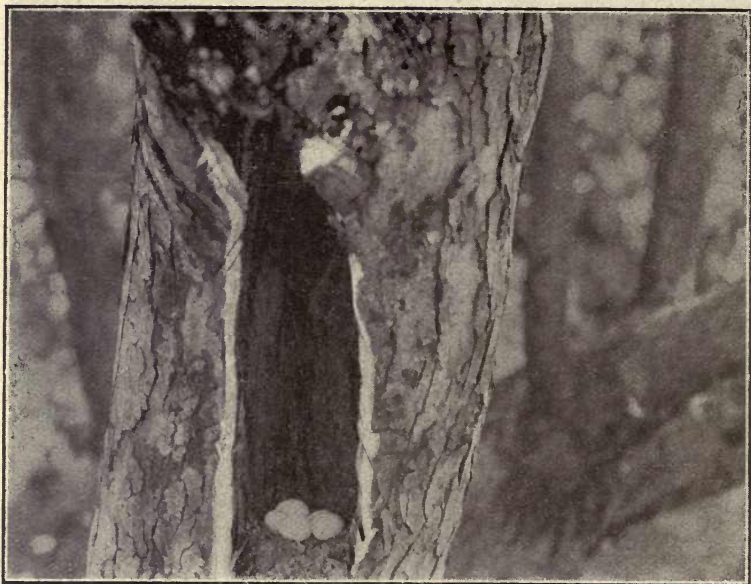
No. 10. Nest and eggs of Dove in cedar.



No. 11. Nest and three eggs of Black-billed Cuckoo.



No. 12. Nest and six eggs of Downy Woodpecker in fence post.



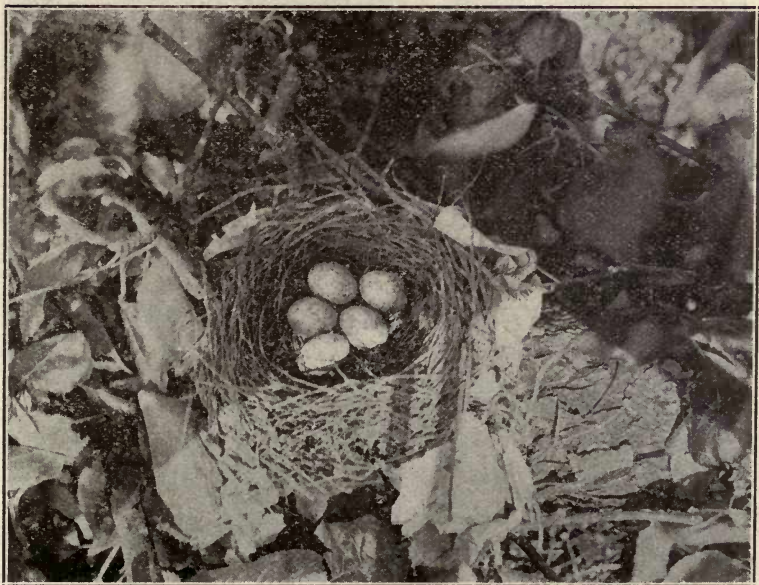
No. 13. Nest and five eggs of Flicker in apple tree.



No. 14. Nest and eggs of Kingbird in apple tree.



No. 15. Nest and six eggs of Phoebe on stone abutment of a bridge.



No. 16. Nest and five eggs of Jaybird in apple tree.



No. 17. Nest of Meadowlark, opened somewhat to show eggs.



No. 18. Nest and three eggs of Chipping Sparrow, with one Cowbird egg, placed in a pear tree.



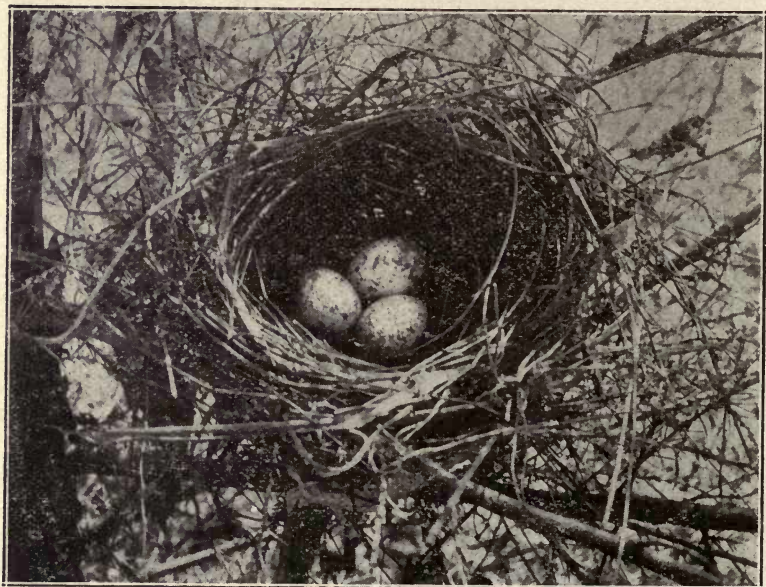
No. 19. Nest and three eggs of Field Sparrow.



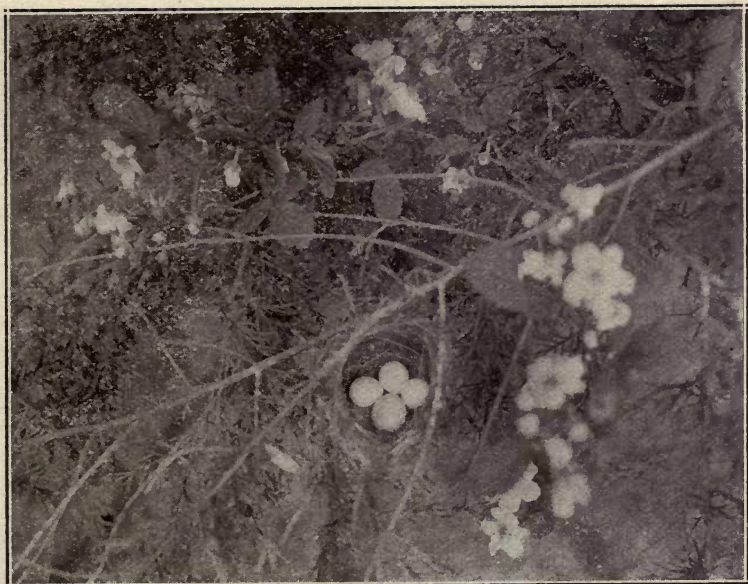
No. 120. Nest and four eggs of Song Sparrow.



No. 21. Nest and eggs of Chewink. Two of the eggs do not show on account of position of camera.



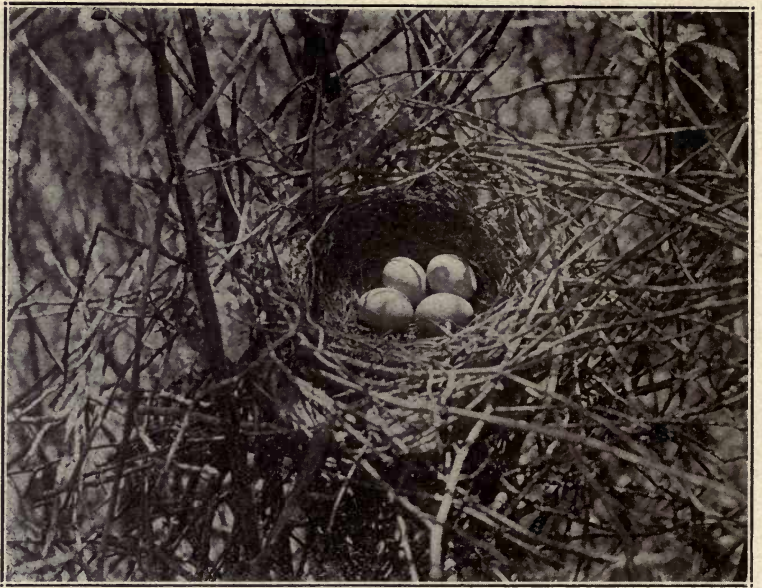
No. 22. Nest and three eggs of Cardinal in cedar tree.



No. 23. Nest and three eggs of Blue-headed Vireo, with Cowbird egg.



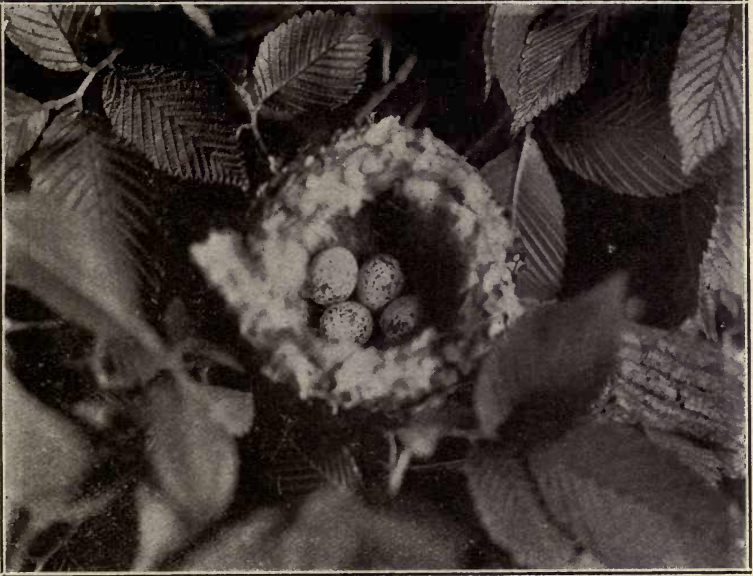
No. 24. Nest and one egg of White-eyed Vireo, with two Cowbird eggs.



No. 25. Nest and four eggs of Brown Thrasher.



No. 26. Nest and four eggs of Brown Thrasher on ground.



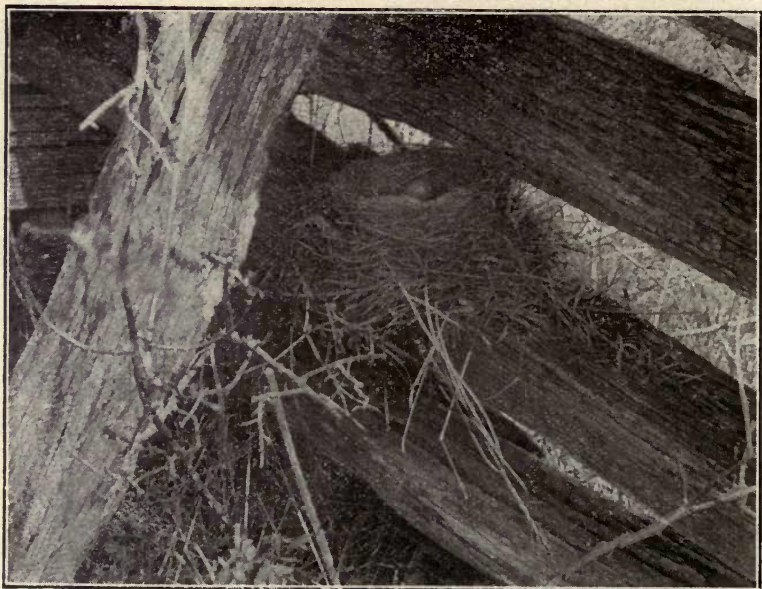
No. 27. Nest and four eggs of Blue-gray Gnatcatcher in elm tree.



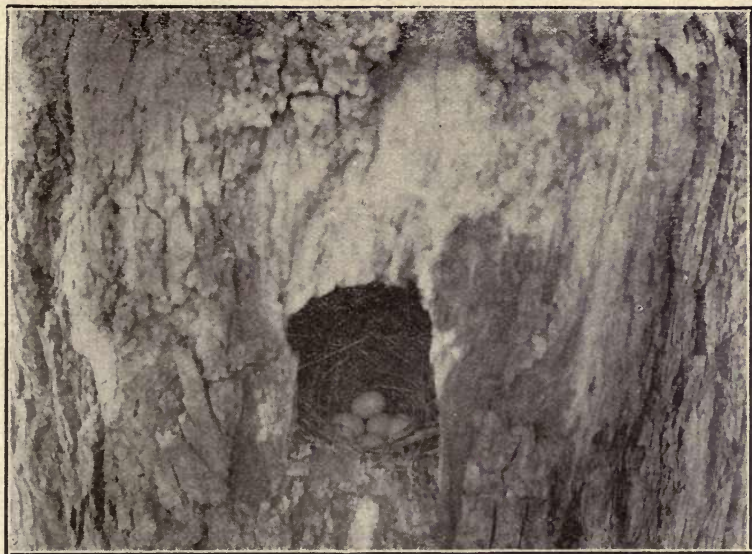
No. 28. Side view of nest of Blue-gray Gnatcatcher.



No. 29. Nest and six eggs of House Wren in sack hanging on fence. Hole in sack was enlarged to show nest.



No. 30. Nest and eggs of Robin on rail fence. Only one egg shows on account of position of camera.



No. 31. Nest and five eggs of Bluebird.



No. 32. Young of Bluebird.

TABLE—Continued.

	Permanent Res- ident.	Winter Resident.	Summer Resi- dent.	Regular Migrant.	Occasional Vis- itor or Migrant.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
52. Marsh Hawk.....	×r			×r		—	28-	—	-19	?	?	?	?	?	—	—	—
53. Sharp-shinned Hawk.....	×					a	—	a	r	—	—	—	—	—	—	1885	—
54. Cooper's Hawk.....					×		—	—	—	—	—	—	—	—	—	22	—
55. American Goshawk.....							—	—	n19	—	—	—	—	—	a	—	—
56. Red-tailed Hawk.....	×						—	—	—	—	—	—	—	—	—	—	—
57. Red-shouldered Hawk.....	×						—	—	—	—	—	—	—	—	—	—	—
58. Broad-winged Hawk.....	×						1885	—	—	—	—	—	—	—	—	—	—
59. Am. Rough-legged Hawk.....					×	—	21	—	—	15	—	1885	—	—	—	28	—
60. Golden Eagle.....	×r					—	—	—	—	—	—	29	—	—	—	—	—
61. Bald Eagle.....					×		—	—	—	—	—	—	—	—	—	7	—
62. Pigeon Hawk.....					×	—	—	12-	-28	—	—	—	—	—	—	—	—
63. American Sparrow Hawk.....	×			×r		—	—	n	n	—	—	—	—	—	—	—	—
64. American Osprey.....						1883	—	12-	-29	—	—	—	—	—	—	—	—
65. American Long-eared Owl.....					×	1886	—	1885	—	—	—	—	—	—	—	—	—
66. Short-eared Owl.....						×	—	19	—	—	—	—	—	—	—	—	—
67. Barred Owl.....	×					?	?	1902	?	?	?	?	?	?	?	?	?
68. Saw-whet Owl.....	×r					?	?	24	?	?	?	?	?	1884	?	1886	—
69. Screech Owl.....	×					—	—	—	—	—	—	—	—	—	—	27	—
70. Great Horned Owl.....	×					?	?	1903	?	?	?	?	?	?	?	?	?
71. Snowy Owl.....					×	1903	—	22	—	—	—	—	—	—	—	—	—
72. Yellow-billed Cuckoo.....						25	—	—	—	n	n	—	—	—	—	—	—
73. Black-billed Cuckoo.....			×			—	—	—	13-	n	—	—	—	-24	—	—	—
74. Belted Kingfisher.....	×	×r				1893	—	5-	—	n	—	—	—	-22	—	-9	—
75. Hairy Woodpecker.....	×					4	—	—	—	—	—	—	—	—	—	—	—
76. Downy Woodpecker.....	×					—	—	—	n	—	—	—	—	—	—	—	—

[illegible]

TABLE—Continued.

	Permanent Res- ident.	Winter Resident.	Summer Resi- dent.	Regular Migrant.	Occasional Vis- itor or Migrant.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
117. Savanna Sparrow.....			x r	x				30-	12-	n-	n-	—	—	—	—4	—6	
118. Grasshopper Sparrow.....			x r					26-	10-	n-	n-	—	—26		4-25		
119. Henslow's Sparrow.....			x a					8-	n-	n-16	n-	—	—	24-	12-	—22	
120. Lark Sparrow.....				x		1903 29						—					
121. White-crowned Sparrow.....				x a		—		16-	n-	n-	n-	—				—9	
122. White-throated Sparrow.....			x r			—			n-6	n-8	n-	—		?	6-	—3	
123. Tree Sparrow.....		x a				—			n	1885 3-5	n	—	—		1885	—	
124. Chipping Sparrow.....			x a					5-	—29	—16	n-	—	—		10-25	—3	
125. Field Sparrow.....		?				26			n	n	n	n	—		2-	—23	
126. Slate-colored Junco.....		x a				—			n	n	n	—	—		5-	—	
127. Bachman's Sparrow.....			x	x a		—			23-	—16	n-	—	—	11-	—17	—12	
128. Song Sparrow.....	x					—			13-	n-	n	—	—		—2		
129. Lincoln's Sparrow.....				x					23-	n-	n	—	—	—19			
130. Swamp Sparrow.....				x		17			22-	—16	n	n	—	—28			
131. Fox Sparrow.....		r		x		—			n	n	n	—	—	—14			
132. Towhee.....	x			x		—			28-	n	n	—	—	—12			
133. Redbird.....				x					23-	—16	n-	—	—				
134. Rose-breasted Grosbeak.....			x a						22-	n-	n	—	—				
135. Indigo Bunting.....			x a						1-	n	n	—	—				
136. Dickcissel.....			x a						12-	n	n	—	—				
137. Scarlet Tanager.....			x	x a					5-30	1886	1886	1886	1886				
138. Summer Tanager.....			x	x a					6-	n-	n	—	?				
139. Purple Martin.....			x	x a					?	n-	n	—	—				
140. Cliff Swallow.....			x	x a					1902 8, 23 16-	n-	n	—	—			18	
141. Barn Swallow.....			x a	x a					—19	n-	n	—	—		—2	—	—1
142. Tree Swallow.....			x a	x a						n-	n	—	—				
143. Bank Swallow.....			x	x a						n-	n	—	—				
144. Rough-winged Swallow.....			x	x c						n-	n	—	—				
145. Cedar Waxwing.....			x		x					n-	n	—	—				
146. Northern Shrike.....					x					n-	n	—	—				
147. Migrant Shrike.....		x	x a	x a						n-	n	—	—				
148. Red-eyed Vireo.....										n-	n	—	—				

TABLE—Continued.

	Permanent Res- ident.	Winter Resident.	Summer Resi- dent.	Regular Migrant.	Occasional Vis- itor or Migrant.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
187. Hooded Warbler.....			× r	1885 1886 × r					20-	n -	n -	-	-	-14			
188. Wilson's Warbler.....				× r						8-14			31-	-18			
189. Canadian Warbler.....			×	× a					27-	-18	n -	-	26-	-15	-19		
190. American Redstart.....			×	× a					12-	n -	n -	-	-	-			
191. American Pipit.....			×	× a					1-	-19	-	-6	-	-			
192. Mockingbird.....			×	× a				24-	n -	n -	n -	-	-	-	-6		
193. Catbird.....			×	× a				16-	2-	n -	n -	-	-	-	-12		
194. Brown Thrasher.....			×	× a				16-	n -	n -	n -	-	-	-	-12		
195. Carolina Wren.....	×		×	× a				16-	n -	n -	n -	-	-	-	-12		
196. Bewick's Wren.....			× r	×				9-	n -	n -	n -	-	-	-16			
197. House Wren.....			× r	×				9-	n -	n -	n -	-	-	-4			
198. Winter Wren.....		× r						-3				-	-	29			
199. Long-billed Marsh Wren.....					× r			a	a	10, 13		-	-	27-	a		r
200. Brown Creeper.....				×				n	n	-12	-	-	-	20			
201. White-breasted Nuthatch.....	×			×				n	n	-15	-	-	-	-			
202. Red-breasted Nuthatch.....	×	× r		×					n	n	-	-	-	-			
203. Tufted Titmouse.....	× a			×					n	n	-	-	-	-			
204. Chickadee.....		×		×					n	n	-	-	-	-			
205. Carolina Chickadee.....	×			×					n	n	-	-	-	-			
206. Golden-crowned Kinglet.....		× r		×				4-	n -	-7	-	-	-	21-	-24	-28	
207. Ruby-crowned Kinglet.....				×				23-	n5-	-18	-	-	-	21-			
208. Blue-gray Gnatcatcher.....			×	×					12	n -	-	-	-	-12			
209. Wood Thrush.....			×	×					23-	n -	-	-	-	1-13			
210. Wilson's Thrush.....				×					10-	-16	-	-	-	2-25			
211. Gray-cheeked Thrush.....				×					28-	-17	-	-	-	1-	-2		
212. Olive-backed Thrush.....				×				23-	n -	-3	-	-	-	3-			
213. Hermit Thrush.....				×				u, a	n, a	n, a	n, a	a	a	a	a	a	r
214. American Robin.....	×			×				n, a	n, a	n, a	n, a	a	a	a	a	a	o
215. Bluebird.....				×													

^cThe tables and index were prepared by Charles Henry Frazee and Leonard Haseaman from the data contained in Mr. McAtee's paper.

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